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PRICE EIGHTEEN PENCE

SEA FISH

AND

HOW TO CATCH THEM.

BY

W.B.LORD.R.A.

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LONDON
BRADBURY AND EVANS
11, BOUVERIE ST., FLEET STREET.

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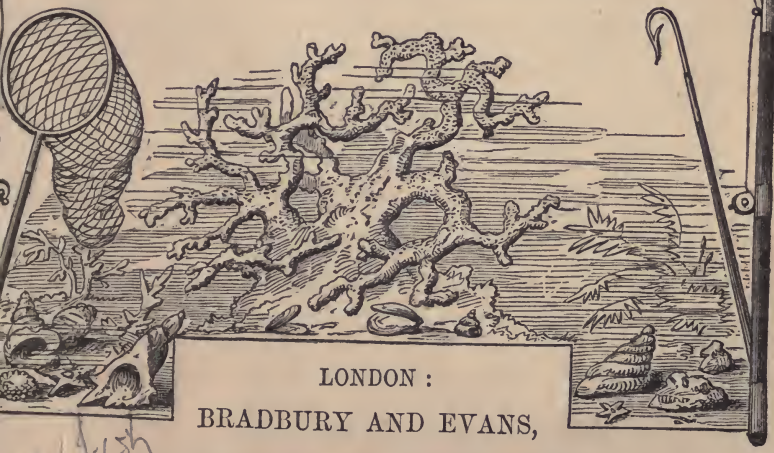

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Fish

LONDON:
BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.

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PREFACE.

I WRITE this little book with a view to furnishing that which numerous friends and correspondents have been long asking for, viz., an inexpensive, plain book on sea fishing and sea tackle. Those of my readers who have chanced, in their wanderings, to have been, like me, cast into all sorts of odd nooks and corners of this world of ours, will not fail to remember how requisite it is to be enabled to fall back on some such occupation as fishing, to pass pleasantly away hours which would otherwise pass slowly or, perchance, gloomily. Few places are there visited by travellers, emigrants, or military men, where fish of some kind (sometimes odd enough, I admit) are not to be lured from their natural element into the bag or basket of their pursuer, if properly equipped for their capture, often furnishing an excellent and abundant meal, where short

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commons would, in their absence, have been the order of the day.

It is my intention, in this little work, to deal principally with the modes of fishing usually practised on our own coast, and the description of tackle and baits which will be found most useful to those who visit the sea-side on health and pleasure-seeking expeditions. I shall also give a few hints and directions as to the best description of outfit for those going abroad. Many of the remarks which I shall have to make will apply to the mouths of large tidal rivers, as many sea-fish at times visit such localities.

Trusting that my readers may spend as many agreeable hours in search of old ocean treasures as I have,

I beg to subscribe myself,

W. B. L.

PREFACE TO THE SECOND EDITION.

The first edition of this volume was written some few months since, with a view to the filling up of a gap which had long existed, and to the supply of a plain cheap Handbook for the use of those who might chance to visit the sea-shore of England, or embark for a voyage to distant lands.

From the advice of friends, and at the request of numerous correspondents, I have greatly added to the original work. The present edition will be found by the reader to contain numerous matters of interest not before described; to be carefully revised, and more copiously illustrated.

July, 1863.

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SEA FISH;

AND

HOW TO CATCH THEM.

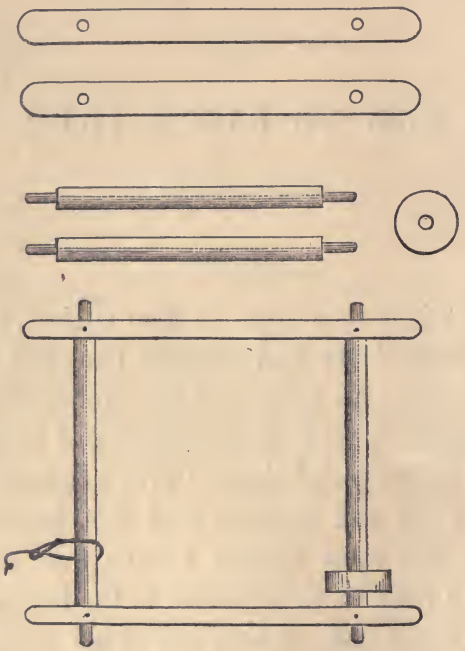
Lines.

Much might be written on this subject, which, to the fisherman, is an all-important one; and very few articles forming his equipment have undergone greater improvements in their manufacture and preparation. Those of round plait,* dressed with waterproof liquid, are, for small and medium-sized fish, infinitely the strongest and most durable I have ever used, and, although a little more expensive in the beginning, are cheapest in the end. I have one in use now, which I took out to India with me, fished with it frequently, and carried it some thousands of miles through the interior, exposed often to the heat of the sun, and to other destructive agencies, "ants included," enough

* Lines of this kind, according to the numbers referred to in this book, are to be obtained at Mr. Lloyd's line manufactory, Redditch, Worcestershire.

to have ended the career of most ordinary fishing lines. It is by no means worn out yet, but is still as serviceable as when new.

It should always be borne in mind, when selecting a line, that the finer it is, consistent with the requisite



strength to hold the fish, the greater will be the chance of testing its powers. Fine tackle is always more destructive than coarse in cool, deliberate hands; but to those who prefer physical strength to careful management, I should recommend a good stout rope at once. All such lines as are not dressed with the

waterproofing liquid, referred to under the head "Dressing," should be "barked," which can be done at any tan-yard for a mere trifle.

The time occupied in barking an ordinary hand line is about forty-eight hours. The durability of lines is much increased by their being so treated. Their sizes and lengths will be given under the particular headings relating to their use. Care should be taken that tackle, particularly lines, should never be put away wet, kept in a damp place, or wound on any board or other winder not admitting of free ventilation. The woodcut represents one of the description I always use. The size must be regulated, of course, by the size and length of line they are intended to hold. Straight-grained oak is the best wood for the purpose; and a small-sized bung, with a hole in the middle for the frame bar to go through, serves to stick the hooks into, keeping their points good, and preventing endless entanglements. Lines and winches used in rod fishing will be dealt with when that subject comes under consideration. Before mounting a new line it should be stretched, and the "kinks" taken out, which is best done by fastening one end to any fixed object, such as a post, take a turn round a smooth stick and walk back to the end. Repeat the process two or three times, when the surplus twist will be taken out, and the line become far less liable to entangle. For waterproofing liquid, *vide* that heading.

Rod.

For general use, a strong, four-jointed, bamboo rod, from seventeen to eighteen feet long, will be found the most useful. It should have two tops, of different degrees of flexibility, of lance-wood and strong split cane, upright rings of large size, brazed, winch fittings, and a wooden ball at the end of the butt, like a salmon rod. I use a small additional butt of about eighteen inches long, which, by being put on instead of the ordinary butt, gives the advantage of a shorter rod without endangering the end of the third joint, by using it exposed or destroying the balance. A partition bag, of stout jean, with three sets of strong wide strings, should be provided. For this or any other rod the reader may require, I would strongly recommend his paying a visit to some fishing-tackle maker of standing and repute, and never to be induced to purchase any of the cheap trash but too often sold to the inexperienced. *Vide* also article "Salmon and Sea Trout."

Winch.

The winch should be of the compressed or flat form, about four inches in diameter, of plain or check movement, calculated to hold about sixty yards of round plait prepared line. A most important point to be observed in all winches is to see that the edges

of the plate bar are filed round, and to have the length of line and capacity of winch so proportioned that no friction can take place between the bars and line, as nothing so soon cuts a line out as contact of this kind. Brass is the best material of which the winch can be made, as wooden ones are apt to warp and split, particularly in a hot climate. Multipliers are not to be recommended.

Bolters

Are long, strong lines, made of stout (deep-sea) line, and mounted with from thirty to six hundred hooks, which must be selected and mounted with a view to the description of fish sought for, snooded on strong water cord, or bundles of strands served with wire. Knots should be tied in the main or head line, over which the snoods should be looped securely. About four feet apart will be found a convenient distance for the snoods, which must be just long enough to prevent the hooks from reaching each other when the line is tight. A large wine cork should be lashed fast to the main line at every ten feet, to make it lay clear of the weeds. The bolter should be laid or shot directly across the coming or receding tide, and a heavy stone or grapnel secured to either end, from which a buoy line, fastened to a pile of cork bungs, or a painted tin canister, soldered up water-tight, should be made fast. This line must be strong enough to

raise the stone or grapnel by without fear of breaking. When it is requisite to examine the line and fresh bait the hooks, which, with a long line, will be very soon after laying it all out, the stone or grapnel at one end should be raised by the buoy line, passed over the boat, and allowed to drop again to the bottom, keeping the main line across the boat, which can be now hauled from one end of the bolter to the other, taking off the fish and fresh baiting the hooks, bringing the line in at one side of the boat and sending it out at the other. This process is called underrunning a bolter. A good mode of keeping a bolter when not in use is to wind it round a small-sized barrel, like those used for oysters. Take out one head, and saw a great number of saw cuts in the staves their long way to hitch the snoods in. The hooks will then be all in the barrel, and out of the way, preventing the hopeless state of entanglement into which bolters too often get in careless hands.* Great numbers of the largest sea fish are taken by this mode of fishing. The baits may be pilchard, lug, garfish, sprat, cuttle, sand launce, lamperns, or small pouting, and the best time for its use is at the coming of the flood tide. A number of fish of various kinds are to be caught by laying down a bolter at low water-mark, with a heavy stone at each end, and a buoy-line to find it by at the receding of the tide. Large basse

* Large tubs may be used where the lines are very long and hooks numerous, coiling hooks and all in them carefully.

are often taken in the midst of the breakers by placing a large flat stone, with the line attached, in the broken water where the fish feed. The line should then be brought to land, and the stone drawn by it towards the shore, as the tide and breakers advance and the fish follow,—few being caught beyond the surf.

Salmon and Sea Trout.

FAM., *Salmonidæ.*

It is not my intention here to deal at any length with the history of the various members of the salmon family, as found by sportsmen, travellers, and naturalists, to inhabit alternately the sea and fresh water rivers of this and other parts of the world, that matter having already been most ably dealt with by naturalists who have written on the subject. Well may the salmon be styled the king of fish, as none surpass, and few equal him and the royal family to which he belongs in the various kinds of sport they afford the true lover of fishing. And well may the salmon fisherman, who is thoroughly skilled in the art as practised with the rod and line, be considered a king amongst fishermen.

The differences between the spawning times in particular rivers, the markings of the young fry, &c., have been so fully entered into of late by gentlemen into whose able hands the laws for the protection of this beautiful and valuable fish have been wisely placed

for administration, that little on that head remains to be said; but every thinking man and well-wisher to his country should, to the utmost of his power, aid the efforts of those gentlemen in the suppression of illegal salmon capture: and it is, I feel sure, only by the hearty co-operation of the owners of property with sportsmen and the authorities, that many of our rivers once so rich, now so poor, can ever be restored to their former value; and it is only to be much wondered at that salmon, like wolves, have not been rendered extinct in this island long ago.

No fish is there perhaps which, from its appearance on the stage of life as a "small fry" to adult salmonhood, has had so much mechanical skill and contrivance devoted to its destruction: nets of endless variety of construction, weirs, cribs, hatches, and the spear which deals out death to the wretched fish, even on its spawning bed, have, it is no wonder, done much to thin the race; still "it is never too late to mend." It will be well perhaps to state, for the information of those of my readers who may wish to know some few of their leading habits and movements, that fresh waters are entered by the salmon and other fish of its kind for the purpose of finding a fitting situation in which to deposit their spawn, and wonderful and unerring instinct is displayed in the attainment of that end. Boldly entering the crowded harbour, undismayed by the plunging, seething steamer, away past pier-head and bridge, up the muddy tidal stream, shooting the turbid

cataracts like a silver bolt—its motto, "Excelsior,"—until some broad clear shallow or brawling pebbly brook is reached, when the pilgrims halt, and with their strong sharp noses scoop and hollow out the gravel, forming a furrow in which both spawn and milt are deposited; when another and another of like kind are formed, spawned in, covered with gravel, and passed over until all the ova has been deposited. The now weakened and impoverished fish watch the "bed" with jealous eye and ready tooth, lest some marauding fish or other intruder should attack the hidden treasure. The old fish now quickly betake themselves to deep pools, in which to regain strength and fit themselves for their return to the sea if spared to do so. They are now what is called kelts, unsightly as they were before beautiful, unfit for food or aught else, and should never be destroyed by the true sportsman, claiming his pity and protection rather than persecution. Speed the poor spent fish on his way, and when the sea shall have once more lent power to his frame and re-silvered his side, he may again return as before to work out his destiny. In about five months from the period of deposition the small fish or fry leave the capsule in which they were imprisoned, work their way up through the gravel, and commence the cares and struggles of life; feeding eagerly on small flies, worms, or the larvæ of water insects. They are now smolts or salmon fry, leading a joyous, leaping life of it in the clear stickles,

until about the month of May, when the first flood which comes drift-laden and turbid, foaming and bounding down from the glens among the hills, carries with it the young salmon destined in their turn, guided by instinct marvellous and inscrutable, to revisit, first as a grilse and then a salmon, the identical stream in which it first saw light, where in turn its young are brought forth link by link in Nature's endless chain.

The season of the year at which salmon visit estuaries and the mouths of particular rivers, of which places we shall chiefly have to speak, will vary considerably, being, as some writers have thought, influenced by the temperature of the water; but whether this alone, or the early or late appearance of insect or crustaceous food, causes this irregularity of their movements, it is hard to determine.

In many localities the bull and salmon trout afford excellent sport to the fisherman, taking flies, spinning, and other baits readily. These fish, like the salmon, visit the various rivers and estuaries in order that their spawn may be deposited in such places as their instinct teaches them are adapted for its protection and well doing. The outfit for the fisherman who intends devoting his attention to the capture of the fish above mentioned, at the mouths of tidal rivers and estuaries, many of which are renowned for the sport they afford, will differ considerably from that recommended for sea-fishing,

properly so called; and some little diversity of opinion will exist as to the length, power, and mode of construction of rods; and as much of the comfort and success of the sportsman will depend on his using "tools" proportioned to his strength, some little care will be needed in the selection. From sixteen to eighteen feet will be found a fair length for a salmon rod, and in good hands will deliver as much line as is generally found needful. No implement which the fisherman requires needs greater judgment and skill in its manufacture than a thoroughly good salmon rod; and my most earnest advice is, never be tempted to invest in a cheap new one, as disappointment and vexation instead of sport will pretty surely be the result. Some of the best and most reliable I have ever used have been of the description known as spliced, and were it not that a ferruled rod is rather more portable, I would use no other. They are now made by many of the leading fishing-tackle makers with match pieces to protect the scarf, and flat slide rings to keep the ends from shifting, which are great improvements, and render the splice much more compact and secure.

The rod for bull and salmon trout may be of a lighter description, but not less than from fourteen to seventeen feet long. For both salmon and sea trout rods, the butts should be of straight-grained ash; intermediate joints, well-seasoned hickory; tops, lance-wood and split cane; large rings, and plenty of them, and a round ball at the end of the "butt."

The reel should be of the flat pattern "check," and large enough to hold a hundred yards of salmon line easily, that is, without fretting against the plate piece and bars; and in fitting it to the rod so place it that when fixed edge upwards the handle should be on the right side; this will ensure the whole strain of the fish coming on the rod, and not the rings. For a left-handed man, the way in which the reel is usually mounted will be found "the thing." As fly fishing is unquestionably the most sportsmanlike and enjoyable mode by which these fish can be captured, I shall deal first with it, and endeavour to point out as briefly and clearly as possible some of the leading points and contrivances had recourse to. But before proceeding to a description of line, flies and fly tackle, I would strongly recommend those of my readers who are not already experienced in the use of the fly-rod, to secure the good offices of some practised friend, who would teach more in one day by practical illustration than could be taught by all the books that were ever written on the subject; for be assured, that the act of wielding the fly-rod skilfully, is no more to be acquired by reading, than is that of skating or cricket playing. Practice and a love of the art are the two great stepping stones to preferment.

The line should be composed of a mixture of silk and horse-hair tapered regularly. A loop should be whipped at the end with well waxed silk, and then touched over with finishing varnish. The length

should not be less than one hundred yards, and in attaching it to the reel, see that the inner end is securely knotted to the drum. A small leather bag will be found useful to keep both reel and line in, when not in use, as it preserves both from injury and dirt.

Casting Lines.

Too much care cannot be devoted to the fitting up and mounting these essential parts of the equipment, as a defect is almost sure to lead sooner or later to the loss of both fish and flies. The casting line for either salmon or sea trout fishing, should be about nine feet long, and for the first two feet, that is to say next the line, should be composed of twisted gut, and the remainder of single selected salmon gut; and especial care should be taken in the selection, to see that no curls or flat places are allowed to remain, and that the strands taper gradually towards the point.

When a sufficient number are cut and prepared, place them in a basin of water about blood-warm for a quarter of an hour to soften. Knot them together with the gut knot, (*vide* "Knots, and Hitches,") make a loop at each end, cut the ends to a moderate length, and then tie them down neatly with fine waxed silk. Finishing off with the varnish.

Flies.

No bait that is used varies so much in pattern

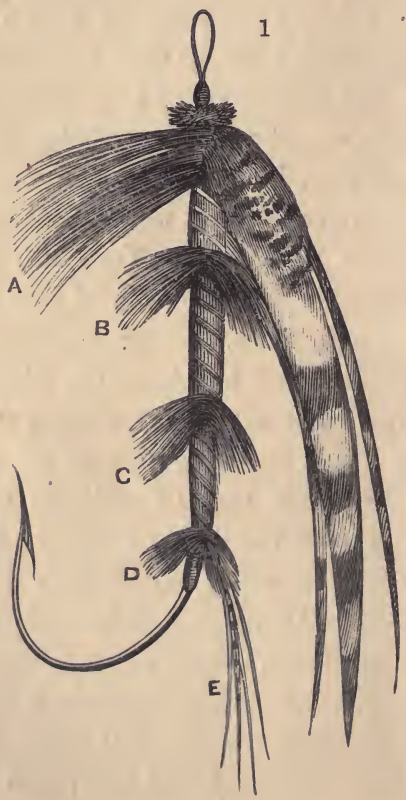
dependent on the locality in which it is used, as the artificial fly, and even in particular localities numbers of peculiar patterns will be found in use, some succeeding where others utterly fail. I shall not therefore enter into a description of the endless varieties made and sold, but confine myself to giving a few leading patterns, which, by adapting the size of the hooks and "make up" to the fishing ground visited, will be found generally useful; but I strongly advise my readers, on visiting a fishing station, to ascertain from some old hand the description of fly in general use, and if possible obtain one or more as a guide. The manufacture of both trout and salmon flies has become quite an ornamental art, and one in which ladies often excel. Considerable practice is required before the novice can expect to turn out a fly which will bear close inspection; but still, with a moderate share of ingenuity, perseverance, and a few lessons from an experienced maker, he will be enabled in a short time to tie a fly which, when well thrown, will prove as tempting and destructive as more highly finished and elaborate productions. Hooks of the Limerick bend are in my opinion far superior to all others for either sea trout or salmon fly manufacturer. Where large sized salmon flies are used, as they often will be at the mouths of rivers and estuaries, one in the majority of instances will be found better than two, but for sea and bull trout two may be used with advantage, looping the dropper

on the casting line between three feet six and four feet from the tail link. Each sea trout fly should be tied on two strands of gut knotted together in the middle, and looped at the end for attachment to the tail link loop of the casting line, or on one of the knots when used as a dropper. Salmon flies, and in fact all flies of large size, should be made on pieces of double gimp or stout gut, so arranged as to form a loop at the head (*vide* cut "Salmon Flies"), which is looped on to the lower link loop of the casting line, which should be made large enough for the fly to pass easily through, taking care that it always goes head foremost. When a salmon rises at your fly, never strike until you can feel him, and then by a movement of the hands and rod, difficult to describe, but when once acquired rarely forgotten, bury your hook. Your fish once fairly hooked, never give him one inch of line he does not take from you by force. Throw your rod well back over your shoulder, let him have the whole spring of it, and as you value him never allow a slack line for an instant; should he spring high in air, as he often will, then you must ease off until he comes down again and renews the fight; never be in a hurry to gaff, and never allow an attempt to be made until the fish is thoroughly exhausted and a good opportunity is offered. Both upper and under gaffing have their advocates, and some prefer a large landing net to either. For sea and bull trout, unless very large, the net will be found best; but for salmon

fishing, I decidedly prefer the gaff, and always use it under rather than over, unless in very shallow water, when it may be used over with advantage.

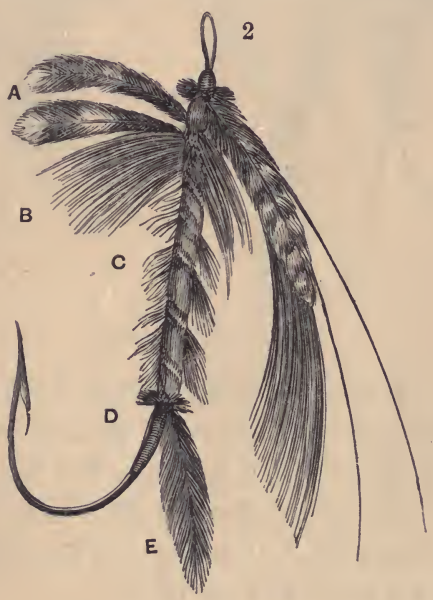
Description of Flies (Salmon).

No. 1.—Wings, two Golden Pheasant top-knot feathers, covered by a mixture of Turkey, Bustard,



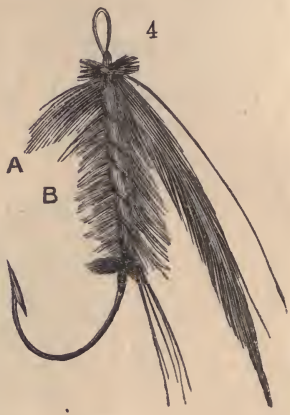
and galena; horns, two strips of scarlet Macaw Frill, hackle, A, bright claret colour; B, light blue hackle; C, Furze blossom, yellow do.; D, tail chip scarlet floss silk; E, tail, Golden Pheasant top-knot and strips of Bustard; body, flat silver braid closely twisted; tail, tag silver; head, black Ostrich herl.

No. 2.—Wings, two Golden Pheasant top-knot feathers, covered with galena; horns, scarlet Macaw; A, two Jungle-Cock feathers; B, ash coloured hackle;



C, roller, Jay feathers; D, pink floss silk tail chip; E, tail, one scarlet Ibis feather; body, pale green floss silk, with a strip of broad gold tinsel; tail, tag gold.

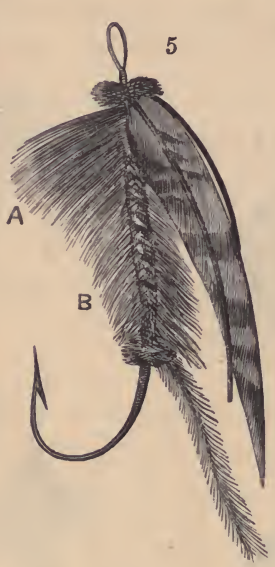
No. 3.—Wing, Bustard or wild Turkey; A, cock Partridge tail feathers, put on very full; body, drab Mohair; tail, chip black Ostrich; tail, two strips of Turkey and two of scarlet Macaw; tail, tag silver.



No. 4.—Wings, a mixture of Turkey, blue Macaw, and Bittern, covered with wild Drake; horns, blue Macaw, A, Furze yellow hackle, B, dun hackle; body, mouse fur with a spiral of round silver twist; tail, chip yellow floss silk; tail, two strips of blue Macaw, and two of wild Drake; tail, tag silver.

No. 5.—Wings entirely of Argus Pheasant; horns, two strips of scarlet Macaw, A, a mixture of claret colour and dun hackles, B, dun cock's hackles; tail rough; body, dun Mohair, with a spiral of thin round

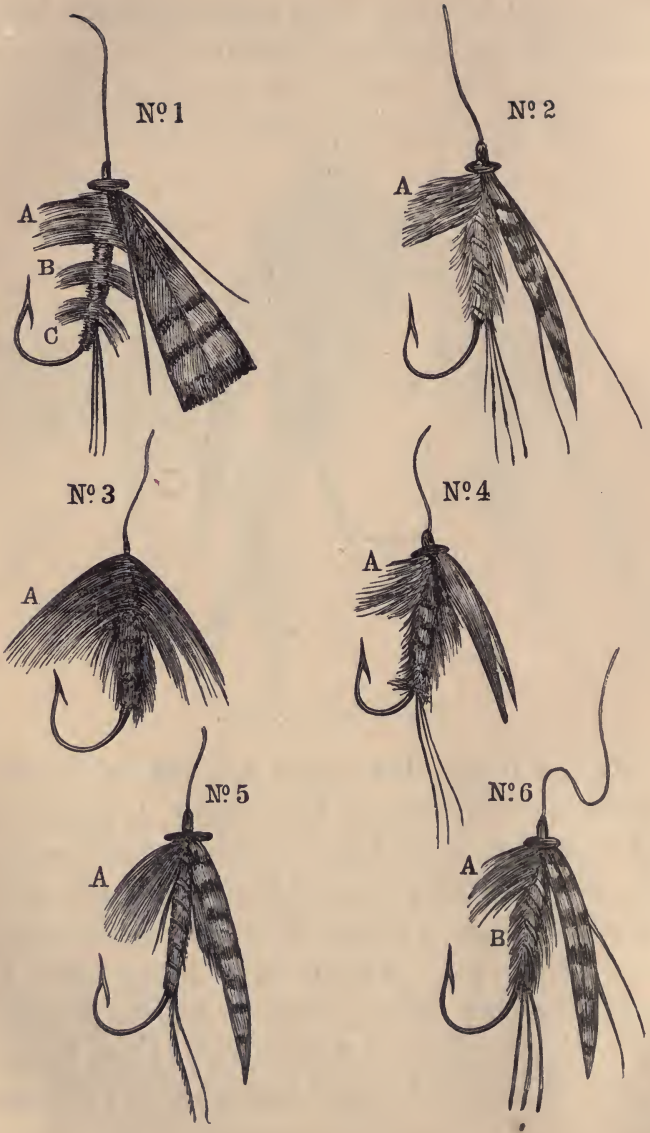
silver twist; tail, chip claret colour Mohair; tail, a Golden Pheasant top-knot feather.



Sea Trout Flies.

No. 1.—Wings, two breast feathers of Golden Pheasant; horns, strips of blue Macaw, A, bright red cock's hackle, B, black do., C, a small-sized red hackle; body, brown Mohair; tail, wild Drake; tail, chip gold.

No. 2.—Wings, a mixture of Turkey and Galena; horns, two strips of Bustard, wild Drake cover, A, bright red cock's hackle; body, bright blue Mohair, rough, with a spiral of flat silver tinsel; tail, five or six strips of Golden Pheasant breast feather; tail, tag silver.


No. 1
A
B
C
No. 2
A
No. 3
A
No. 4
A
No. 5
A
No. 6
A
B

No. 3.—Tied "Buzz" with a very full pair of black red cocks' hackles; body of Peacock herl, tied very full with two bands of round gold twist: a most excellent fly of this description is formed by adhering to the same pattern, only substituting dun hackles for the black red, and hare's fur for the Peacock herl, and putting bands of silver.

No. 4.—Wings of Grouse feathers, A, a black cock's hackle and one of claret colour worked together; body, claret colour Mohair; tail, chip amber, yellow; tail, wild Drake slips, spiral gold tinsel; tail, tag gold.

No. 5.—Wings, a mixture of blue Macaw, red Macaw, Golden Pheasant breast, and wild Drake; A, grouse hackle; body, amber floss silk; spiral round gold twist; tail, chip black Ostrich; tail, blue Macaw slips.

No. 6.—Wings, a mixture of blue and red Macaw, Turkey and summer Duck, A, blood-red hackle, B, very dark claret do.; body, Mohair of the same shade; spiral of round gold twist; tail, chip black Ostrich; tail, four strips of Golden Pheasant breast feather; tail, tag gold.

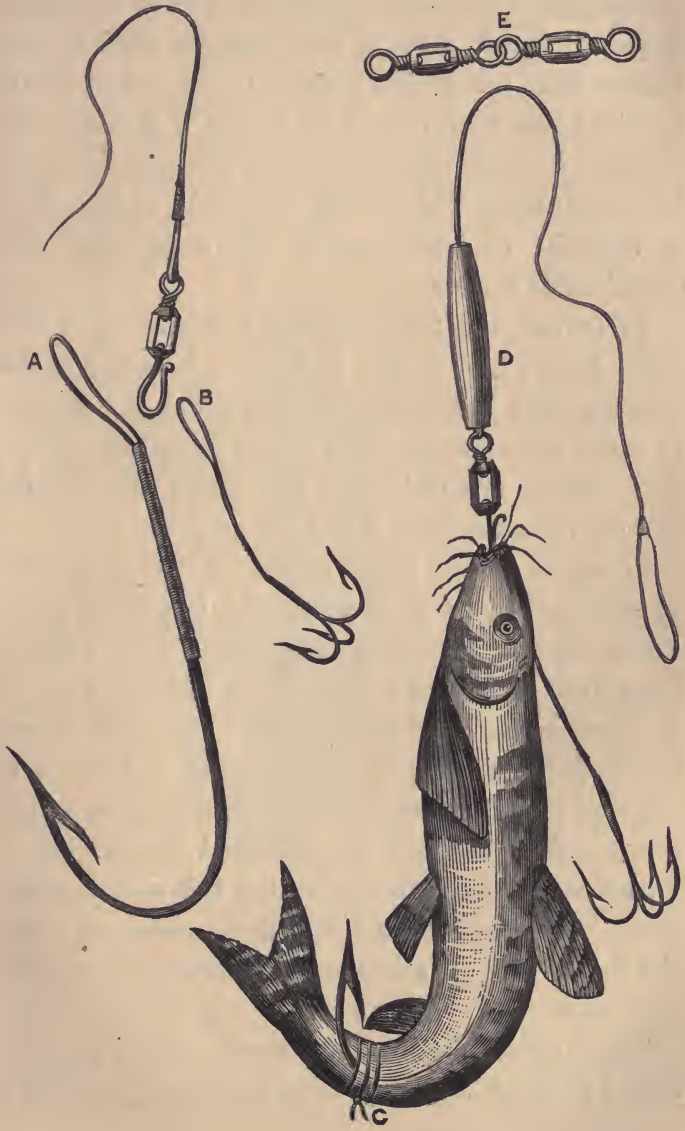
Salmon on quitting the sea for brackish or fresh water, take baits of various kinds much more readily than they are found to do after any lengthened sojourn far from salt water, and several modes may be had recourse to for their capture. Next to fly fishing, perhaps spinning is the most enjoyable, if not the most successful; and as a bait for this kind of fishing,

the Loach will be found most excellent. The annexed cut will show the position of the fish when placed on the hook, and the arrangement of the tackle.

To prepare a bait as shown, hook your baiting-needle to the loop above the hook (which should be large Salmon size, Limerick bend); this may be a little over half an inch long, and of strong salmon gut (*vide* cut, A); enter the needle a little above the tail at the side, pass it up through the bait and out at the mouth, so that the loop at the head of the hook may come just beyond the lips, hook your needle to the loop B of the triangle, pass it through the gills and out at the mouth, at the side opposite to that from which the hook protrudes, place the loops together and hook on your swivel, take three or four turns with strong thread, round both fish, and hook as at C: pass the fish down until it is bent sufficiently, stitch the lips fast together with a needle and thread, taking a couple of turns round the loops, run your lead down over your swivel, length as at D: the trace should be of selected salmon gut, about six feet long: at two feet from the first or swivel length, a pair of swivels, linked together as at E, should be placed, and a single one at about six inches from the end, to which the line is looped.

The loop at the end of the line should be large enough to allow the bait to pass through; by spinning with the Loach, or other small fish (small trout or sand launce are also good for this purpose), in the brackish water at the mouths of rivers or estuaries, basse,

pollock, or other fish, will frequently run, and it will



therefore be found a good plan to have the first length of fine gimp where such fish are found to be numerous. A powerful rod, such as that recommended for sea fishing, with the ordinary salmon line and reel, will be found best for this, and the modes of fishing which follow. A small-sized spoon-bait, the new spinning-bait (*vide* article "Spoon-bait"), and the various kinds of artificial minnow, may at times be used with considerable success.

These and the foregoing baits may be spun with either from a boat (which is best) or from the banks, drawing them just sufficiently fast through the water to make them revolve in a lively, tempting manner. The instant you feel your fish, strike sharply, and never give him an inch if you can help it.

There are certain places in most waters frequented by salmon, where a short period of rest is taken before commencing the journey upwards; in such places a large fresh shrimp, as shown in the annexed cut, will be found a most destructive bait. The trace should be shotted according to the strength and depth of the stream, and a cast made as with a minnow a little above and as far over the supposed resting-place of the salmon as possible. Allow the bait to sink nearly to the bottom, and then bring it towards you across the stream in short sharp jerks, repeating the cast and movement until you get a run.

Two large-sized well scoured red or lob worms will also be found a killing bait, particularly during a

partially flooded state of the river. It should be thus prepared: enter your hook, which should be medium Salmon size, Limerick bend, at the head of your first

worm, bringing it out at the middle; draw it well up, so as to cover the arming of the hook, and then put on the second, which should be so placed that the hook may pass from the middle towards the head in which the point rests. Some persons use a float for this kind of fishing, but I prefer lifting and drawing, as it is

called, with rather a heavily shotted trace, keeping rather a short line, and following down the course of the stream, letting the bait drop away until it touches the bottom, and then drawing it slowly up again with a short tremulous movement of the rod. When a fish is felt, slacken your line instantly, until a second or even a third tug is felt, when you may fix your hook by a smart sidelong stroke from the wrist. A species of trimmer is also used in some localities for taking salmon. It is thus prepared and used:—A bullock's bladder is inflated with air, its mouth securely fastened with waxed thread, and a piece of tough stick, about four inches long, made fast to it; round this the line is wound until a sufficient length, say about four feet, is left. A slit at the end of the stick is then made, by which the line is held as by a spring, until the fish takes, when the bladder runs round and allows the line to be unwound from the stick, giving line to the fish, which is followed in a boat and soon taken. A number of these poaching contrivances, which are generally baited with sand launce, are set afloat at once on the coming of the tide, and are allowed to drift with it up creeks and rivers. Fish of various kinds can be taken in this way.

The Cross Line.

Although considered a poaching contrivance, there are places where its use may be to some extent con-

sidered admissible, and such of my readers as may visit the large rivers and lakes of distant countries should know its mode of use and construction; there are also wide open reaches of brackish water which are often found between high rocky cliffs or forest only accessible by the use of boats or canoes, and at times there will be encountered places where no boat or canoe could be used, and too wide to throw across, but containing the very *élite* of the finny race.

Streams there are also, flowing down to meet the sea, with banks so wooded that an ordinary rod could not be wielded or fly delivered. Here, then, if anywhere, the cross line may be used, and thus it is prepared:—Two strong light rods, about sixteen feet long, with large upright rings, are required, with reels of check action and flat pattern, each to carry at least one hundred yards of prepared round plait silk line. The "centre piece" is composed of a piece of line of the same description, about thirty feet long; this should be divided exactly in the middle, and a pair of the double swivels (*vide* woodcut E, p. 23) securely looped to the ends of the two halves, and another two secured in the same way to the two extremities. Mark off each half—viz., the portion of line between the centre swivels and each end—into five equal parts; at each of these points take three or four turns with stout waxed silk round the line, securing the ends firmly, and finishing with varnish; these will form the points of attachment for the traces, and prevent

their shifting. When looped on, each trace should be about four feet long, the first eighteen inches twisted, and the remainder single salmon gut, looped at each end. When about to be used, the centre piece is stretched to its full length between sticks planted in the ground for the purpose, the traces looped on, and the flies attached, taking care to vary the patterns as much as possible. If boat-fishing is intended, the reel lines should be made fast to the centre piece, through the swivels at the ends; and the line stretched from boat to boat, pulling or drifting, as may be most expedient, keeping the rods low, and allowing the flies to play just below the surface. If it is intended to fish a river, the end of one of the reel lines should be made fast to a stone of convenient weight, a sufficient quantity of line coiled down on the bank, and then by a strong upward cast pitch the stone to the opposite bank, where it is detached by the companion in waiting, who has the centre piece and flies ready to attach and wind over to their proper position. Each fisherman plays the fish which may happen to take on his side of the swivels in the centre, reeling up or giving line as the fish either approaches or leaves him. A code of signals should always be arranged, so that by holding up a hand or dropping it, line may be either given or taken, as necessity may require. Brisk windy weather is generally best for this kind of fishing.

The Otter

Is a contrivance which answers some of the ends the cross line is intended to gain, but, unlike it, one person can govern and regulate its movements. It is to all intents and purposes a poaching implement, and should never be used unless in peculiar places and during some of the straits to which travellers and emigrants are at times subjected. It is thus made: a thin board of some light tough wood, such as willow or withey, should be prepared, and so weighted with lead at its lower edge that it will just swim upright. Cut both ends of the board to a sharp edge, and bore two holes through it, by which a string like the belly-band of a kite and for the same purposes is knotted; to this the main line is secured. A short strong rod and large free running reel should be used.

When the Otter is to be used, the flies, or baited hooks, should be looped on as described in the last article, the board set afloat, and by walking on and towing it, the position of the belly-band will cause it to run out, and keep the line at the desired distance from the fisherman. It can be used from a boat or canoe with much greater ease than from the shore.

Albacore and Bonita.

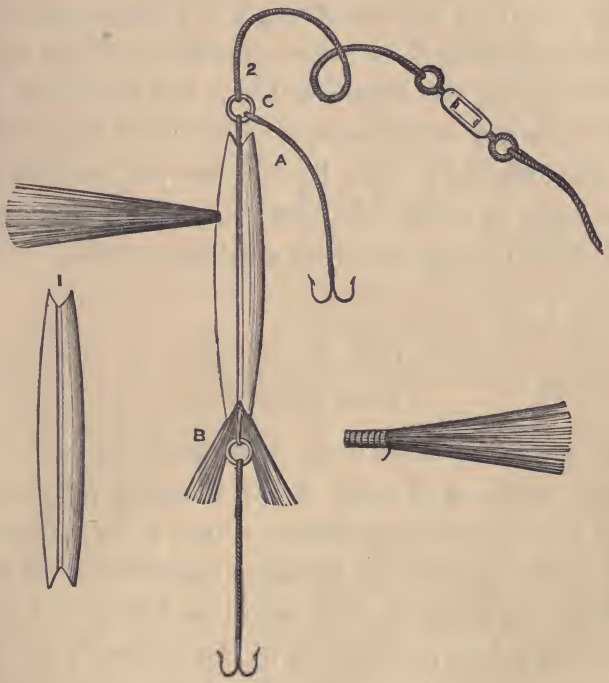
FAM., *Scomberidæ.*

The above fish, although occasional visitants to the coast of England, can scarcely be classed among those

varieties which most concern the fisherman who confines his wanderings to the British coast, as they are rarely met with, and more rarely known to take a bait, under our cloudy skies; and mention would not have been made of them here, were it not for the sport they afford the voyager within the tropics, where their unwearying pursuit of the unfortunate flying fish, and the eagerness with which an imitation of their active and glittering little victims is seized, but too often for them leads to capture. The line and hooks for this description of fishing will be referred to when speaking of the outfit to take abroad. A very destructive bait is prepared as follows, and is so easy to construct, that fitting up two or three will be found an agreeable pastime on the voyage out: * procure a piece of oak or other strong grained wood, of about five inches long; cut tapering from head to tail like a small fish; cut a deep longitudinal groove both above and below it, making a notch at both head and tail (*vide* woodcut, No. 1); then twist a piece of stout brass or copper wire into the groove, leaving a ring at each end, at the notches, as in No. 2; bore a hole through the body with a gimlet or hot wire at A, and into each side secure with hot pitch a tuft of bristles from a sweeping brush, for wings, and another shorter tuft, laid flat, secured with waxed thread, for a tail; prepare a long narrow strip of sheet lead, wind it firmly and

* Sailors often use a strip of white rag as a bait.

evenly in a spiral coil from end to end, secure the extremities, scrape the lead bright and smooth, and the body is finished. Mount it as follows: fasten two



No. 4 sea hooks back to back, as directed in "Hook Fastenings," on a piece of very stout gimp, or strong prepared round plait line, served with fine copper wire about five inches long, including a loop, which must be secured to the tail ring, as in B; the same arrangement on a three-inch piece must be looped to the head ring as at C; attach your line with two of your large-sized swivels at two feet apart,

serving the first foot of line with copper wire, as at the tail, the first fourteen inches from your bait, and your arrangements are complete. Let out your line, and keep your bait moving through the water, and occasionally jumping from wave to wave; and if our active friends are in the neighbourhood, the fisherman will not be long in anticipation of a bite, which is generally in good earnest; when hooked, be cool, patient, and deliberate, as these fish, large or small, are immensely strong and active, requiring cautious handling.

The Mackerel.

FAM., *Scomberidæ.*

Few fish are there more remarkable for beauty of colour, elegance of form, and commercial value, than that now under consideration, and few are there that afford better sport or are more palatable when captured. Its range is very extensive, being met with from the coasts of England to the Western Islands, and most of the bays and harbours along the coast of Ireland. They are exceedingly abundant along the Devonshire and Cornish coasts throughout the whole spring, as also on the coast of Hampshire and Sussex.

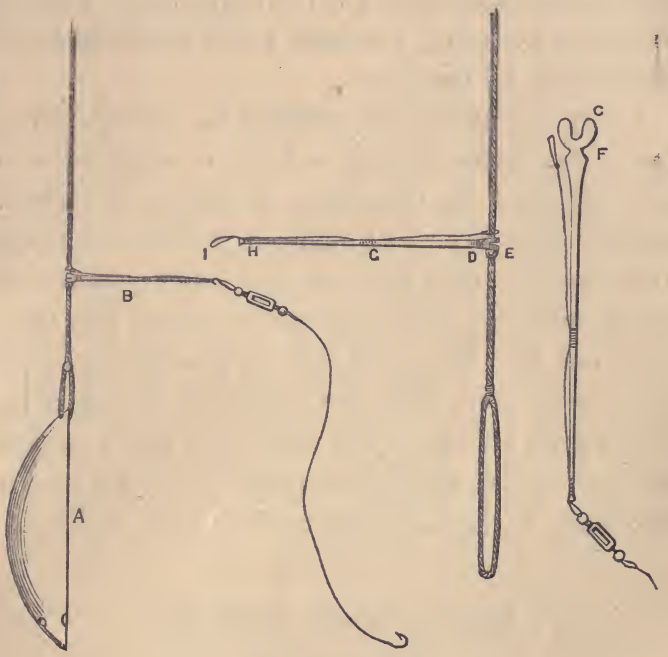
As the spring advances the shoals approach nearer to land, enter bays and estuaries freely, take the bait readily, and afford excellent sport to the lover of fishing, as he can indulge in his favourite pastime in a great variety of ways, some of the most successful of

which it will be my duty to describe to the reader. Of all the modes adopted for the capture of our lively striped little friend, perhaps the most enjoyable is that known as "whiffing," which is thus practised. A good staunch sailing boat should be procured, and a day chosen when a light breeze of wind, known amongst sailors and fishermen as a "mackerel breeze," is blowing. The boat should be tacked forward and back, over the best ground, at the rate of about from two to three miles an hour. The line should be of round plait, prepared size No. 7; length, twenty-five yards; mounted as shown in woodcut. Two lines of this description can be easily managed by those accustomed to this kind of fishing; but for a novice, one well attended to will make a far better return than two indifferently handled; the sinker, A, will vary in weight according to the depth the fish are found to lie, from half an ounce to five ounces, which may be doubled if needed. The mode of making these, and marking their sizes, will be spoken of under the head "Sinkers," as will be the method of fastening them to the lines, and to each other, when increase of weight is wanted from tide, &c. The bait will consist of a long narrow strip cut from the side of the tail of a mackerel, known by fishermen as a "lask." It is cut tapering, to resemble a small fish, and is secured to the hook by the large end, through which the hook should pass backwards and forwards twice; the bait or baits should be kept in constant motion by gently drawing the

line forward about a yard, and then allowing it to run out again; a strip of scarlet cloth, scarlet leather, a small sized spoon bait (*vide* "Spoon Bait"), or the new spinning bait (*vide* Spoon), will all be found more or less successful, as will strips or "sneads" of other fish, mud worms (for a description of which, *vide* "Worms"), white flies, six of which should be looped on a twelve-foot trace of gimp (for the mode of making and mounting them, *vide* "Flies"), and strips of salt pork rind, cuttle fish, or squid. Another method which affords excellent sport is to have the boat rowed or sculled into a shoal, using your rod and line as in ordinary fly-fishing, mounting three of the white flies before alluded to on a seven-foot trace of stout salmon gut.

Great numbers are also taken when the boat is at anchor, by using any of the natural baits given above, a light sinker, from six to seven feet of fine gimp, and a No. 5 Limerick hook, "Trout pattern," on a foot of stout round gut. Different depths should be tried to find the lie of the fish, and when ascertained, the line let out accordingly. Good sport may also at times be had from the rocks, piers, or quay heads by using the rod and line, gut trace, hook No. 5 L, split duck-shot for sinkers, and a float. Worms or cuttle fish are excellent bait for this kind of fishing. The depth will vary with the locality. Mackerel in vast quantities, small in size, but of excellent flavour, are caught with both nets and lines in the Bosphorus, from the Sea of Marmora to the Black Sea, and enormous shoals visit the

coast of the Island of St. Helena, taking a bait such as a small strip of pork rind greedily. For whiffing tackle, *vide* woodcut. A is the sinker looped to the



main line, B is a piece of whalebone about ten inches long, forked at the end, as at C, fitting the main line like a "boom," as shown at D (two or more of these may be used at a time, mounted two feet apart), resting on a knot E, and secured to the main line by twisting well round the notch F with well waxed silk; loop on the trace, which should be about from eight to ten feet long, and composed of strong salmon gut, or two-

thirds fine gimp, and the portion next the hook stout salmon gut, to the main line, and secure it to the whalebone boom, as shown at G and H; loop on a medium-sized brass swivel at the loop I, and the tackle is finished, excepting the hook, which should be trout pattern, No. 4 Limerick.

A very successful mode, known as "railing," first, apparently, introduced by our Gallic neighbours, is often practised on the coast of Kent and Sussex. Leads of from twelve to eighteen pounds weight are often used, and from seven to nine hooks mounted on thread snoodings, from eighteen to twenty feet long, made use of. The best bait is the mackerel lask before described. The very rapid run of tide often encountered off the above mentioned coast, renders the heavy sinker described requisite when the boat is proceeding at the rate of about three miles an hour.

Scad, or Horse Mackerel.

FAM., *Scomberidæ.*

The scad, as it is commonly known, is frequently taken in mackerel and pollack fishing, taking the baits used for these fish with great avidity, and generally causing more disappointment than pleasure when brought within sight, so that it is but seldom intentionally fished for. As it is a coarse, bony fish, it is occasionally salted in for winter use by the poor, but rarely met with at the tables of the wealthy, being

more frequently cut up for bait. Their range is wide, extending round the coasts of England, Scotland, Norway, Denmark, and round many of the islands of the Mediterranean.

The Grey Mullet.

FAM., *Mugilidæ.*

The grey mullet is too well known to need a description, and is generally so well appreciated at table as to render any comments on that head uncalled for. Its habits are such as rarely to cause it to travel far to sea; a marked preference being shown for such places as have both fresh and salt water pouring into them at the rise and fall of the tide. Tidal mill-ponds, floating docks, and about the wharfs at the mouths of large rivers, are all favourite localities, many such places being at times visited by immense numbers of these fish, which can frequently be seen at such times with their mouths level with the surface, sucking in the soft particles of floating vegetable or animal matter brought by the flowing tide. The lips of this fish are particularly delicate and sensitive, enabling it to discover and instantly eject any small substance the least distasteful. Several modes of fishing are had recourse to; that practised with the rod and line is generally the most successful. A nine-foot trace of fine strong salmon gut, No. 6 or 7 Kirby hooks, "Trout pattern," tied on eight-inch pieces of stout gut, looped one foot

apart on the trace, and retained in their places by knots tied in the trace for that purpose, and a few split duck-shot for sinkers, if there is any "run;" if not, use no sinker of any kind.* Bait with either a small piece of mud-worm about half an inch long, covering all the hook but the extreme point, or small flakes of the green weed which is found attached to stones in fresh-water rivulets like green silk; twist three or four times round the hook, and allow a small portion to hang free like a tail. The plump white larvæ from wasps' nests, small pieces of soft green cabbage which has been boiled with any description of meat, or artificial flies of a bright gaudy description, may be used at times with success. The harpoon arrow, of which a description will be found, may also be tried.

The mullet requires more than ordinary care in its management when hooked, as it is exceedingly strong in the water; and the lips, which are usually found to be the bed of the hook, being so easily torn, any violence is pretty certainly followed by the loss of the fish. A landing-net is exceedingly useful. The grey mullet occurs with more or less abundance round the English coast, along the southern shores of Ireland, and as far north as the Baltic Sea and the coast of Norway. I have also taken them in the harbour of Sebastopol, and the mouth of the Tchernaya. The mullet spawns about the latter end of June.

* A small cork float may be used in fishing by either of these modes.

The Atherine, or Sand Smelt,

FAM., *Mugilidæ*,

Better known as the smelt, with which fish it is generally confounded, although totally distinct from it, and rarely ever found where the true smelt is met with, the former being mainly confined to the southern coast of England, from the Hampshire coast, along the whole coast line of Dorset, Devon, and Cornwall. It is held in high esteem by epicures, and considered an excellent fish for invalids. They, like the preceding fish, the grey mullet, are extremely partial to creeks and estuaries where the tide ebbs and flows, and great numbers are often taken by rod fishing from piers, quays, and rocks during the summer months, late in the evening being generally the best time; and should any watercourse or stream discharge itself into the sea in any creek or bay, there they may be sought for with pretty much certainty of success. When on the feed, which they generally are on the coming of the young flood tide, the bait is taken greedily, and very often four or five are landed at a time. Use your upper three joints of rod with the short butt described under "Rods;" a seven-foot trace of gut with five or six hooks, No. 8 or 9 Kirby, fastened on five-inch pieces of stiff stout gut or hog's bristles (gut is best), looped on the trace one foot apart, press a split duck-shot on the trace at each looping, and a very light sinker (about a quarter of an ounce) on

the bottom end of the trace. Bait with small pieces of mud-worm, and keep gently "lifting and drawing." When a bite is felt, strike lightly, and to one side. Gas lamps, or other strong lights near the water side, at times attract them in considerable numbers.

The Herring.

FAM., *Clupeidæ.*

Few fish are so well known to the million as the herring, finding its way as it does into both the highest and very lowest society; and depend on it, reader mine, that not even the gifted fish of Eastern romance pass through such strange weird scenes. The wretched cabin of the collier, the coiner's den, the burglar's cellar, and the breakfast table of the peer, are all visited by him, either in the guise of the humble low-priced thirst-provoking fork-tortured "*Soldier*," or the more pretentious bloater. Great numbers are also consumed fresh; and from very early ages, herrings, in the various ways in which they are prepared, have been great favourites; *vide* old couplet:

> "Herring and ling,
> Herring and ling;
> Of all the fish in the sea,
> Herring's the king."

But the royalty of the poor herring, like that of many unfortunate pieces of humanity, has only led to

its merciless destruction. Few fish are more erratic in their movements, and no certainty attends their continuing to visit any particular fishing grounds. Much diversity of opinion has existed and still exists relative to the migrations of this fish, some supposing —Anderson and Pennant amongst the number—that their winters are passed in the Arctic Sea, and that they only return to our shores as the season advances. There is no ground for the support of this opinion, and it appears, from the researches of some of our most acute ichthyologists, that their winter journeys are not extended to any very great distance from our own shores, but that they remain in deep water until the period of spawning arrives, when shallow water is sought as being more congenial, from many causes, to the vivification and well-doing of the spawn when deposited. This having been done, the great majority return to the deep sea from whence they came, but leave certain stragglers behind, which are caught by various methods at all times through the year. The herring fishery has, from very early ages, been most important in a commercial point of view. The great bulk of herrings are taken by drift nets, which are also most extensively used, with certain modifications—such as size of mesh, &c.—for the capture of pilchards and mackerel. These nets hang curtain-like in the water, having no leads at the bottom, and are supported at the top by a number of lengths of rope, which extend from the upper edge of the submerged net to the

main line or drift rope, thus allowing the net to hang perpendicularly in the water, about twenty feet below the lower ends of the short lines. Buoys are used to keep up the drift rope, which is allowed to run out as the boat proceeds on its way, carrying the net with it, when another and another net is attached in succession, until sometimes a mile or a mile and a half of nets are out. The boat is then allowed to ride at the end, as if at anchor, keeping, by the drag thus established, all the nets end on and in a line. Night is the time chosen for this kind of fishing, as the fish, not appearing to perceive the snare, as they perhaps would by day, strike into the meshes, where they are entangled by their heads and pectoral fins, and are thus taken at times in incredible numbers. Sometimes the nets are taken up once during the night to be overhauled and re-shot, and at others are allowed to remain down the whole night. They are wound in by the use of a capstan, mounted in the boat for the purpose, round which the drift rope is brought. In some localities the herring affords good sport to the rod-and-line fisherman, taking a bright gaudy fly with the greatest eagerness. In some of the sea lochs and estuaries on the coast of Scotland, great quantities are often taken with the fly. They may be fished for from the bank with an ordinary fly rod and gut casting line, making use of one fly, which should be tied on a 6 or 7 hook, Kirby Trout pattern; body, scarlet chenille or German wool; wings, a mixture of scarlet and

white; scarlet ibis and white gull's feathers are good for the purpose. Place one duckshot about four inches from the fly to take it just below the surface, where the herring will take best, and troll with it, so to speak. Boat fishing is by far the most successfully practised where four or five rods may be easily used, taking care that the lines are just a trifle shorter than the rods, which may be about twelve or thirteen feet long, and made of spliced hazel wands, well seasoned. The butt ends should be sharpened, to admit of their being thrust into a long compactly-made faggot of twigs or reeds, which should be fastened under each thwart of the boat; the rods are thus always at hand, and are not liable to be lost overboard, as sometimes three or four fish are on at a time. No reel is required, but a loop of strong line spliced to the top is used to loop the line to; two feet of strong gut casting line will be sufficient, and no shot used, merely allowing the flies to float with the current.

The evening is the best time for this fishing. Herring are also to be taken in some places by fishing with small pieces of mud-worm from rocks and piers, exactly as in fishing for Atherine. Such of my readers as may visit the North American coast will find most excellent herring fishing, if they like to pursue it.

The White Bait.

FAM., *Clupeidæ.*

This fish was long considered fry, or the young of other fish, but the researches of Mr. Yarrell and other eminent ichthyologists have proved beyond all question, that it occupies a position amongst fish quite as distinct as that of either the herring or pilchard. The capture of white bait will scarcely, I apprehend, be attempted by any of my amateur readers; still, for the sake of old Greenwich and Blackwall reminiscences, a short description of the mode by which it is captured may not prove unacceptable. The Thames furnishes the whole supply required by the London market; no fishery, that I am aware of, having been established on any other river. From April to September may be considered the white bait season, although scattering detachments are frequently taken with other fish off the southern coast during the winter months. The coming of the young flood tide is the time chosen, and a net of funnel-shape and very fine mesh used. It is placed with its mouth towards the run of the tide, which serves, by its passage through the meshes, to keep the net distended. The fish in ascending the stream keep near the surface, and about three or four feet will be found a good depth to sink it to. When a sufficient quantity of fish is supposed to be taken to warrant an overhaul, the tail end of the net is

brought on board like that of the Keer drag, the string unfastened, and the contents suffered to run out, when the sticks and other substances are removed, and the net reset.

The Basse.

FAM., *Percidæ*.

Although the name of sea dace has been at times given it, the basse is a sea perch, resembling in many of its habits the perch of our fresh-water rivers and lakes. It is at times an exceedingly greedy feeder, taking small fish or spinning bait very freely. These fish, like the grey mullet, are fond of creeks and estuaries leading to large rivers, and are particularly fond of frequenting the positions occupied by old hulks which have been long moored in one place, feeding on the mussels and marine insects which are to be found adhering to the weed which collects round old timber. They are far more on the alert for food late in the evening or at night, than during the day, when the largest are generally taken. The neighbourhood of landing places, where pilchards or other fish are cleaned, will be found often visited by basse in considerable numbers, attracted by the small pieces of fish offal floated off by the tide, at which times a piece of pilchard or pilchard gut is a pretty sure bait. Great numbers are taken with bolters (*vide* "Bolter"), baited with pilchard, cuttle, sand launce, or

other small fish. Excellent sport may often be had by fishing with the rod (full length) from any convenient point or headland. The trace should be of strong gimp, about a yard long, mounted with two swivels; hook, No. 3 or 4 Limerick pattern, light sinker, and large cork float. Bait: pilchard, pilchard gut, launce, or mud-worms, or, in the absence of these, mussels or shrimps may be at times used. They are frequently taken high up large rivers emptying themselves into the sea, with the white fly spoken of under the head "Mackerel," particularly the small or shoal basse, as they are called by fishermen. The tackle for basse fishing should be well examined and very securely put together, as they are very powerful fish and fight hard. Basse may be drawn together in considerable numbers by sinking in a convenient spot, near where they are known to frequent, a piece of old fishing net containing a stone and as much fish entrails and offal as can be conveniently managed; fish about a foot from the ground with either your rod or hand-line, and the basse, duly assembled, will not be long in paying you a visit. A gaff or landing net should be kept at hand, as "weighing out" is always a risky operation, and, with a basse of any size, not easy of accomplishment. It is to be met with on the greater part of both the southern coast of England and Ireland, depositing its spawn in the summer as near fresh water as it can reach.

The Gurnard.

FAM., *Triglæ.*

Several varieties of this fish are taken on the coasts of both England and Ireland, being in the best season during the autumn and winter months. Great quantities are consumed in many of our large cities, the fish being sweet-tasted and wholesome, although somewhat dry. The great bulk are taken with the trawl net, although at times considerable numbers are caught on the bolters laid down for other fish; and in some localities good sport may at times be had by using the chop-stick arrangement described under that head; hooks, No. 3 or 4 Portsmouth pattern, gimp or round plait snooding. Fish pretty near the ground with crab, whelks, and pieces of sand launce, or other bright-coloured fish, as bait: gurnards are great consumers of small crabs, and other crustaceous animals, their hard armour-plated cheeks and heads well adapting them for the pursuit of this kind of food.

Striped Red or Surmullet.

FAM., *Percidæ.*

The surmullet has from the very earliest ages been esteemed a great delicacy, and fabulous prices appear to have been paid for specimens of unusual size. Martial relates that one of six pounds realised 48*l.*, one still larger 64*l.*, and 240*l.* were paid for three of very un-

usual size, thus clearly showing that our much quizzed London aldermen are very anchorites in the cost of their indulgences compared to the magnates of by-gone days. Its capture by the hook and line is generally considered rare, although a great number were taken last summer in certain places in and about Plymouth harbour, whilst fishing for grey mullet and smelts. They are taken with mud-worm on precisely the same description of tackle as used for the latter fish, and are found to frequent the same description of localities. The months of August and September appear to be the best for taking them by angling. Their usual size is under thirteen inches, although occasionally taken much larger. Many are taken by nets far out at sea, where its range is extensive. The spawn is deposited in the spring.

The Bream,

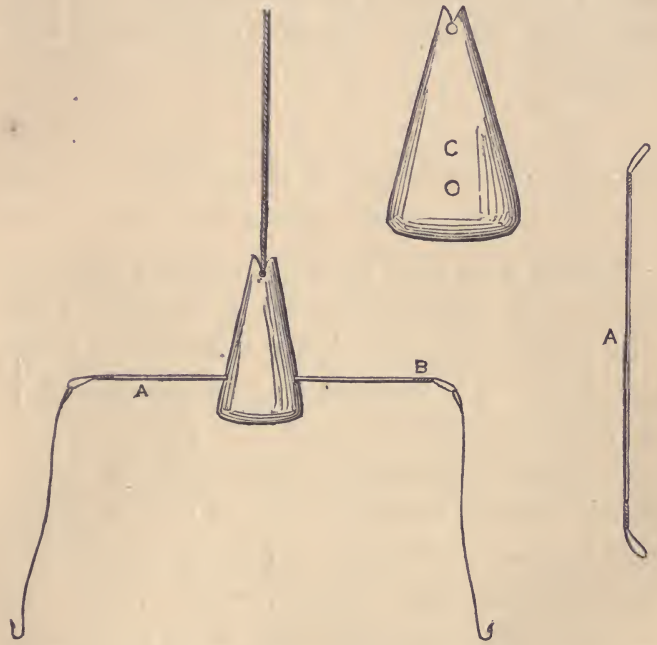
FAM., *Sparidæ*,

When full grown, may be considered in the light of a deep-sea fish, rendering a good "offing" generally requisite before the ground frequented by the bream is reached, the marks for which can, in most cases, be ascertained, with pretty much certainty (*vide* "Marks"), from fishermen or boatmen on the coasts where it is found. "When reached, let go the anchor." It is met with pretty generally both on the English and Irish coasts, as well as far to

the north, and vast numbers (although I am not certain as to their exact identity of species) are to be caught off the Cape de Verde Islands, particularly that of St. Nicholas, where I remember, on one occasion, having excellent sport with them. The tackle for bream fishing should be strong, No. 9 or 10 of the round description, mounted in the same manner as shown in the woodcut under the head "Mackerel," only the sinker much heavier, the whalebone booms stronger, and the traces shorter; about two feet will be found long enough. The hooks should be such as are generally known as whiting hooks, No. 3 or 4 Portsmouth pattern, secured to one foot of strong gimp, looped to the trace, which must be of proportionate strength; bait with pilchard, herring, sand launce, or other fish bait. The sinker should be so regulated as to keep the line perpendicular against the run of the tide, and the baits kept at about an arm's length clear of the bottom, moving them gently up and down until a bite is felt. Bream are found generally to bite best after sunset. A great variety of fish are often taken, when fishing in this way, which may be considered a convenient and good mode of general fishing. When so engaged, two or three float lines (*vide* "Pollack") may be laid out to advantage. The young of this fish, known as chads, also afford excellent sport to those by whom the number of slain is considered as of the first importance. To the juvenile sportsman, chad fishing is a source of much

amusement. The chad is to be found in great numbers in most of the bays and harbours, particularly of the southern coast, all through the summer months, greedily seizing such baits as mud-worms, or pieces of their own unfortunate brethren, who have preceded them in their trip to the surface. To prepare a chad for bait, it should be first killed by a smart blow or two over the head, cut off the fins, which are as sharp as needles, very like those of the river perch, and requiring exactly the same mode of handling when secured, viz., a downward sweep of the hand, so as to compress the spines, and turn them backwards; hold the fish overboard, and scrape the scales from tail to head with the bait knife until quite clean, when small narrow pieces of about an inch long should be cut transversely, and hooked through one end. Fish about a foot from the bottom. The line for chad fishing should be round, No. 6 or 7, mounted as shown in the accompanying woodcut. Hooks, No. 2 Kirby trout pattern, tied on a strand of stout gut, which must have a loop tied in the end, to loop with the spreader A, which is made of a piece of round scraped whalebone, fifteen inches long, tapered at each end, to which a loop of any ordinary fine-sized fishing line must be whipped with waxed thread, as at B. The spreader is passed through the hole in the sinker, C, until its centre is reached, when the edges of the holes must be closed in tightly with a small hammer, which will, if properly done, retain the spreader

securely in its place. This arrangement is generally known amongst fishermen as a set of "chop sticks." An additional spreader may be passed through a hole at right angles with the other, if the fancy of the



fisherman should so incline. I consider one spreader sufficient. Frequent reference will be made to this mode of mounting under the name "chop-sticks," as it is used for many other kinds of fish, and is, in fact, a most useful arrangement. Chads are often attracted round a boat in large shoals, by sinking at the end of a line a piece of old fishing net, with as much fish

entrails and offal as can be conveniently managed, and a good-sized stone, to sink and keep it steady. Let it go to the bottom, and then draw it up, about three feet, when secure it by making fast the line. This attracts pouting, and many other varieties of fish, to the neighbourhood of the boat. The bream spawns late in the autumn.

The Wrasse, or Rock Fish.

FAM., *Labridæ.*

This fish is far more remarkable for the variety and beauty of its colours and markings, than for its value as an article of food, as it is but, at best, a soft, watery, insipid fish. It is occasionally fished expressly for, but far more frequently taken when in pursuit of other kinds of fish, particularly when angling for basse or pollack off high rocks in deep water. It is, as its name implies, an inhabitant of rocky places, and those deep cavernous clefts through which the tide flows are its favourite places of resort; as the mollusks and small crustacea, on which it mainly feeds, are generally abundant in such situations. The wrasse may be taken with the rod and line by fishing in such places as described, where, by cautious approach, the fish may often be distinguished in search of food, pushing their noses into clefts and bunches of weed in search of shrimp or small crabs. A bait, such as a piece of scollop, razor fish, boiled limpet, mussel, or a small

soft crab, is rarely thrown in vain. I have heard old fishermen say, that a split Turkey fig was irresistible to his wrasseship; but of this I cannot speak from experience, never having used it. The hook may be No. 3 or 4, whiting size, with the shank shortened, fastened on double gut or gimp. Hand-lines, mounted with from four to six hooks, may be used, baited as above, and snooded on pieces of prepared line, eight inches long, making use of a stone or any other heavy substance, as a sinker, only taking care that the line and stone should be attached to each other by a piece of small twine, which, in event of the stone getting entangled between pointed rocks, may, by breaking, set the line free. A long naturally-grown stick of any tough wood, with a fork at the end, will be found most useful, both in taking up or throwing out lines of this description. The wrasse spawns in the spring of the year.

The Cod.

FAM., *Gadidæ.*

Few fish are there possessing more interest in a commercial point of view than the cod, which forms such an important commodity, in its preserved state, for export to foreign countries as well as for home use, the daily consumption of this fish in London alone being enormous. The banks of Newfoundland, the Dogger Bank, &c., have long been known as places of

resort for myriads of fish of this description, and recent investigation has proved the newly discovered fishing-ground near Rockall to be a perfect "El Dorado" of cod-fish, swarming there in numbers never before equalled, and of a size rarely reached by cod in other localities. By the crews of two fishing smacks twenty-seven tons were taken there in five days; and expeditions which started subsequently to this great success appear to have been equally successful in their results, so that little doubt exists that this lonely and scarcely known spot on the ocean's surface is destined to become a rich mine of wealth to the hardy cod fishermen.

Few of my readers, I apprehend, are likely to adopt cod-fishing as an amusement, as few occupations are attended with greater hardships. Still it perchance may happen that they, in their wanderings, may be thrown where cod are to be captured.

They are to be taken with the hand-line, fishing very deep with heavy sinkers; line of the description universally known as cod-line, and hooks made expressly for this purpose. A good mode of mounting is by passing a small iron rod about two feet long with a ring at each end through a hole in the sinker, exactly in the same way as that spoken of as chop-sticks in the article on Bream. Bait with sand launce, sprats, &c. Bolters should be set where cod are to be met with, as bolter fishing is a most successful mode of taking them. *Vide* "Bolter."

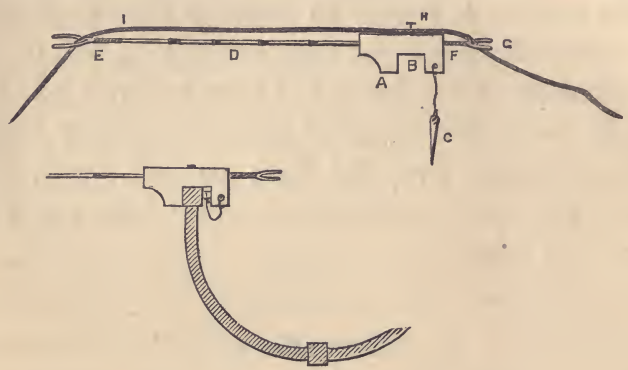
Great numbers of small cod or codlings are also to be taken in some places, particularly the southern coast, either by the chop-stick arrangement before described under that head, or by throwing a leaded line mounted with three or four hooks, No. 3 or 4 Portsmouth pattern, baited with whelks or soldier crab, as far out into the coming tide as possible: some little practice is needed to ensure a long clear cast. A small stiff stick about three inches long, tied to the line just above the sinker, will serve to give a hold for the fingers in throwing, and much increase the power of the thrower over the line; pouting, basse, and other fish, are frequently taken whilst fishing in this way.

The Pollack.

FAM., *Gadidæ.*

The pollack, like the mackerel, affords much sport to the fisherman, as numerous modes are had recourse to for its capture, each generally successful in its way; and first on the list stands "whiffing," which is practised in the same way as when mackerel fishing; only, when whiffing for pollack, I prefer one hook, No. 3 or 4 Limerick trout pattern, tied on strong salmon gut, with a nine-foot trace of gimp, and two swivels, No. 4, brass. The line should be prepared round plait, No. 7. The baits may be mackerel, "lasks," sand launce, strips of cuttle,

mud-worms, white flies, small-sized brook lampreys (pride), or pilchard gut. Numerous spinning baits are had recourse to, of which the small spoon or new spinning bait is perhaps the best. Many lines can be used at once by making use of the contrivance explained in the woodcut, which I find far more useful in every way than the short rods



used in boats by many fishermen. A is a piece of elm, birch, or any other strong wood, with a square notch cut in it, as at B, which should be wide and deep enough to take in the gunwale of the boat, to which it is fastened by the wedge C. D is a piece of rattan cane four feet long, with a small fork of naturally-grown wood spliced to the end, as at E. The cane is passed through a hole bored for it through the block A, the long way, and allowed to project three inches beyond it, as at F, where it is bound next the block with waxed thread, and its extreme end split for about an inch, as at G. When put together, the

cane is prevented from shifting in the hole by a small brad or fine nail being driven down through the block into it, as at H. I shows the way the line passes and is retained in the split. With this arrangement the fish hook themselves, and the elasticity of the cane prevents the line from being broken; as on any heavy strain, such as that produced by a large fish, the line is allowed to run out through the split, when it can be instantly seized and veered away to meet the rushes of the fish, which are at times pretty hard ones. Each of the little blocks above described should have a coat of paint given it to preserve the wood. They only cost a few pence each, cane included, and last for many years. Great numbers of pollack are taken when at anchor, by using hand-lines as mounted for mackerel whiffing only, with a heavier sinker; in fact, of weight sufficient to contend with the run of the tide. It is always well, when fishing in this way, to lay out two or more float-lines over the forked canes already described, with merely the trace and swivels. Hook the same as in whiffing, but no sinker. Put on a large-sized cork float, about eighteen or twenty feet from the trace, and let it drift away with the tide. "Rauning" pollack, or racers, as they are called, are taken in the same way, being often found in the same localities. The young of the Rauning pollack abound in certain localities, and are taken in countless thousands from every rock and headland by the use of tackle of the most primitive character.

Many of the sea lochs of Scotland afford excellent pollack fishing, vast numbers being taken during the season (May, June, and July) by various means; fly-fishing by many rods, as described under the head "Herring" in this work, is a very successful one: the only difference in the arrangement is, that when pollack fishing, the hooks should be larger and the tackle stronger; No. 4 Limerick trout pattern hooks, strong salmon gut trace, and a stout horse-hair line, will be found a good outfit. The flies the same pattern as recommended for herring, only tied larger. The Sound of Jura is celebrated for the number of pollack to be taken in it by rod fishing.

The Whiting, Pouting, Bib, or Blind.

FAM., *Gadidæ.*

Much difference of opinion has existed as to whether these fish are distinct varieties, according to their names in the heading; or the same fish in different stages of growth. The latter opinion appears to be that entertained by Mr. Yarrell, who may be considered one of the highest authorities on such matters, and one by whom an opinion would not be formed without great care and careful research.

Pouting are to be caught at most seasons, particularly during the summer months, when they are found in immense numbers about the borders of sunken rocks, and where reefs run out into deep water. Few

fish take the bait much more freely, and when once on the proper marks, little fear is to be entertained of sport. The same mode of mounting the tackle is to be observed as in chad fishing, described as chop-sticks, only the hooks should be less—No. 4 Kirby trout pattern, tied on gut. The best bait for pouting is the mud-worm, of which a piece just large enough to cover the hook should be used, leaving no tail hanging. In the absence of mud-worms, whelks, soldier crabs, or small pieces of fish, such as pilchard or chad, may be made use of. Let your sinker run to the ground, when your line should be drawn up an arm's length, and kept moving up and down until a bite is felt, when a quick upward jerk will serve to fix the hook.

The Whiting.

FAM., *Gadidæ.*

The excellence of the whiting as an article of food is a point on which little difference of opinion exists, and it is a favourite at the tables of both the rich and poor, both in its fresh and preserved state; buckhorn, as dried whiting is called, being considered a great delicacy, and, when carefully prepared, commanding a very high price in the market. Whiting fishing affords employment to a great number of fishermen on our coasts, and it may be considered a fish of considerable commercial importance, and is found on nearly all the coast range of both England and Ireland, as well as

far north. It is taken all the year round by one mode of fishing or another; but for those who pursue fishing as a pleasant pastime, a winter's night on the whiting ground would not, perhaps, be particularly pleasant or enjoyable.

Particular marks are known to fishermen as showing the ground frequented by the whiting at particular seasons, which almost any boatman you employ can find out from his associates, if not himself a fisherman. Night is by far the best time for whiting fishing, and parties are frequently made up during the summer to visit the whiting ground, which will be generally found some little distance off the land. A good pea-coat will be found a valuable companion on such expeditions, and the commissariat department should be placed in efficient hands. The lines should be round plait, either No. 9 or 10; the sinkers from 2 to 4 lb. weight, and hooks No. 3 or 4, long shank, Portsmouth pattern, fastened on stout pieces of gimp, looped to the boom—arrangement described in the woodcut under the head "Mackerel." The trace for whiting fishing should not be more than two feet beyond the boom, and three or four booms may be used at a convenient distance apart above the sinker. Bait with mussels, cuttlefish, pilchard, or mackerel.

Professional fishermen on the coasts of Kent and Sussex take considerable numbers of whiting during the winter months by laying out a light description of bolter line with between one and two hundred hooks

on it, which are generally baited with pieces of sprat; small cod and other fish are constantly taken whilst fishing in this way.

The Haddock.

FAM., *Gadidæ*.

The haddock is an exceedingly popular member of the above family, being most extensively consumed in all our large cities—"Finnan haddies" being almost as well known as red herrings. They are found on nearly the whole coast line of England, Ireland, and Scotland. Dublin Bay has long been celebrated for the size and excellence of its haddocks, and the Nymph Bank also furnishes an ample supply to those who visit it for their capture. Many of the salt-water or sea lochs of Scotland are visited by vast quantities of this fish, and afford excellent sport to fishermen; they are taken with both hand-lines and bolters, many of the latter being fitted with over 500 hooks. Whenever haddocks are found, the same modes of fishing will generally prove successful as those recommended for whiting and cod (*vide* articles so named).

The baits may be mussel, whelk, sand launce, and herring, fresh or salt. They are in the best season during the autumn months, spawning in February and March. These fish, although generally considered inferior to the whiting in flavour, are held in consi-

derable esteem, from the great readiness with which they take salt.

Haddocks, like herrings, are very erratic in their habits, and no dependence can be placed on their movements: roaming about in vast shoals in pursuit of food, which, when found, is followed from place to place until, fresh supplies being encountered, fresh lines of direction are taken, thus bringing them within the scope of nearly every contrivance, both net and line, used for the destruction of the larger varieties of fish.

The Hake,

FAM., *Gadidæ*,

Is a most ravenous and greedy fish, following the shoals of pilchards when on the coast, frequently getting enclosed with them, when a scene such as would be enacted were a pack of wolves to be shut up in a sheepfold ensues, and the wretched pilchards are swallowed wholesale. At such times the outsides of the nets are watched by numbers of greedy hake, only too anxious for an opportunity to dart among the fish seen through the meshes of the net. Great numbers may be taken at such times by using pilchards for bait, and immense numbers are taken with the hook and line round the coast, where the arrival of the pilchards attracts them in vast quantities. The line for this kind of fishing should be the kind known as

deep-sea line, "whipcord laid," a heavy sinker, and hooks made expressly for hake fishing, with an extra length of shank, and a ring at the top. Mount them exactly as for "cod," with the small bar. Make the traces of four or five strands of stout water-cord, laid loosely together, and served from end to loop with fine soft brass or copper wire. A small piece of jack chain is sometimes used instead. Some caution is required in unhooking these fish, as their teeth are of the most formidable description, and inflict rather painful wounds. Hakes, though not of high reputation as fish for the table, are infinitely better than they are generally supposed to be by those who have not eaten them, and when in proper season are scarcely to be surpassed in solidity and flavour by any of their more costly finny brethren. According to Mr. Couch, says Yarrell, the hake spawns from January to April.

Flounders and Plaice.

FAM., *Pleuronectidæ.*

These fish abound in nearly all large tidal rivers, even far beyond the influence of the tide, and in such creeks and estuaries as have rivers discharging themselves into them. Considerable numbers are to be taken with the rod and line, either with or without a float, using two or three hooks—No. 4, Kirby trout pattern, fastened on gut, and either split duck-shot or the light sinker, shown as No. 2 in the woodcut

describing sinkers: either mud-worms, common earth-worms, or small pieces of fish bait may be used successfully. The bait should drag the ground. Another plan by which I have taken great numbers, both at home and abroad, is to mount a line of stout prepared water-cord, with eight or ten hooks tied on bits of fine line, gut, or twisted horsehair, each about a foot long, and a split duck-shot on each, mounted two feet and a half apart; a small-sized sinker or musket-ball, with a hole through it at the end; hooks and bait as above. Secure the shore end of the line, which should be about five-and-twenty yards long, to a sharp wooden peg thrust into the ground; or, if too hard to receive the peg, a heavy stone may be used to fasten the line to. Make use of a long naturally-grown stick, forked at the end, or a portion of an old fishing-rod with a forked stick fitted to it, to throw out and take up the line with. Three or four of these lines, as well as the rod, may be made use of when the "pot" is the consideration. Numbers may be taken from the boat by using the chop-sticks, and just keeping your sinker clear of the ground, so as to allow the baits to drag a few inches. Considerable numbers of fresh-water eels are often taken when fishing in this way, as well as numbers of other fish. As a means of enriching the larder when encamped on the banks of large rivers abroad, few plans answer so well. Of course, when the fish run large, the hooks and other gear must be of proportionate strength.

The Turbot.

FAM., *Pleuronectidæ*.

Few fish are held in higher estimation for the table than the turbot, which, by some, is preferred even to the lordly salmon; and from their remains being found, as they sometimes are, associated with ancient coins and utensils discovered amongst the remains of cities long passed away, one is led to suppose that they were in great request amongst the gourmands of past days. Whilst making some researches amongst the ruins of the ancient Chersonesis, particularly in that portion known as the House of Lemichus, I discovered great numbers of the sharp thorns found on the backs of the turbots of the species which still abound in some parts of the Black Sea, in the same situations and deposits as those in which the bronze ornaments, coins, pottery, glass, &c., were discovered; and some wild picturesque scenes have I witnessed on the tideless Tartar coast, where, torch and spear in hand, the turbot is still followed and struck by night whilst feeding on the sandy stretches which there abound, and are frequented by numerous members of the finny race.

The trade with Holland for turbots has long been very great, as they are taken in immense numbers near the Dutch coast. They are captured at some seasons by trawl nets, and at others by the use of bolters or long lines (*vide* article "Bolters"), baited with

sand launce, smelt, gar-fish, lamperns, or father lashers, which are collected in great numbers for the purpose. The same means are had recourse to for taking them on our own coasts, those of Yorkshire and Durham being celebrated for the number taken; and at particular seasons two sand banks, known as the Varne and the Ridge, which lie between the Kentish and French coasts, are visited by numbers of French and English fishermen engaged in the turbot fishery. On the western coasts numbers are taken amongst the heterogeneous mass of flat and other fish brought to light by the trawl; and whilst bolter fishing for other fish, a turbot will often reward the fisherman. The season lasts from the end of March to the middle of August.

The Conger,

FAM., *Murænidæ*,

Or conger eel, as it is generally called, is an inhabitant of such places as afford deep crevices and holes under rocks, and old sunken vessels, as places of shelter; in which situations it frequently attains an immense and formidable size. Strange stories have been told by divers of the fierceness with which any attempt at invading their fastnesses had been met. This fish has by some persons been considered as identical with the common fresh-water eel; but a sufficient number of marked anatomical differences exist in their structure to convince the most casual

observer of their distinct identity. The conger is, as a general rule, a night feeder, and is taken in great numbers by both bolters and hand lines. They should be of the deep-sea kind, and very strong. A heavy sinker, and hook, "conger pattern," fastened on snooding, made up of loose strands of strong line laid together without twisting, and served from end to end with soft brass or copper wire, as for hake fishing, cuttle fish, pilchard, or sand launce bait, may be used, and a dark, cloudy night chosen for the sport, when lines for other fish may be laid out to advantage. A few heavy blows across the back of the neck, or abdomen, are generally required to disable the conger when taken, as he possesses a very powerful pair of jaws, and well understands their use.

Fresh-Water Eels,

FAM., *Murænidæ*,

Are so frequently met with in brackish and even salt water, at the mouths of rivers emptying themselves into the sea, that they are, I think, fairly entitled to our notice and consideration. Few fish are more rich and palatable, and from their abundance in many of our large rivers and deep reed-fringed canals, so aptly described by poor Tom Hood, as the "Ely Places," they are justly popular at the poor man's table, furnishing many a palatable stew, and crisp brown fry; and ancient records go far to show

that the monks of old were by no means ignorant of their flavour, or indifferent to their culinary excellence. Little is known of the infant history of eels, and until found of about the size of reeds, when they are known as "elvers," just as little is seen of them. At this stage of growth they may be seen during the spring of the year, after a "fresh," working their way in countless thousands, steadily ascending the stream, keeping one given line: up over weirs, amongst masses of fallen rock, through shingle, up the brawling shallow, up the moss at the old mill hatch, and, as the song says of the grass, "comes creeping creeping everywhere." Every little tributary stream thus receives its detachment of youthful eels, who shelter themselves under stones, amongst roots, and in holes; and well it is for them that such strongholds are to be found, as their enemies, during their early days, are numerous and powerful—most predatory fish, its own brethren of a larger growth at the head of the list; wild and tame ducks, otters, and cormorants, all seize them greedily. Their growth mainly depends on the quantity and quality of food to be obtained, some streams being celebrated from time immemorial for the size and excellence of their eels. Few fish are so generally destructive to other breeds of fish, greedily devouring the spawn, persecuting the young fry, and fixing on every sickly fish they can discover, and the rapidity with which the presence of prey of any kind is discovered by them is truly marvellous. I remember, when a boy, being highly amused, and in

a piscatorial point of view considerably enriched, by this peculiarity of theirs. I was fly fishing in one of those charming little trout streams which, rising on the Cornish moors, fed by clear bright springs flowing so abundantly from amongst the old grey mist-capped Tors, flashing, rippling, and brawling through a brief existence, and then, like another grain of sand to the desert, taken up and whirled away amongst the grand white-crested waves, as they come thundering in on the Cornish coast. The day was bright, the water clear, and not a rise broke the surface of the pools. Trout were not to be inveigled, that was quite out of the question, much before evening; so I sat myself on the parapet of the bridge, and watched the movements of a particularly dusty young miller, who, pocket-knife in hand, was, with the dexterity peculiar to Cornish men and women, cleaning a large pail of pilchards, throwing the offal into the pool at his feet. My attention was very rapidly transferred from the active miller to the no less active eels, which were flocking from all quarters in the highest possible state of wriggle and eagerness. Small pieces of the offal on a fly hook denuded of feathers, and dropped directly before their noses at the end of my casting line, proved highly destructive, and a heavy basket of eels, topped up with some trout taken in the evening, was the result.

Perhaps one of the most successful modes of catching eels in tidal rivers is by clotting, which is thus

practised. A large number of lob and garden worms are to be obtained, well scoured in wet moss, over which a little milk has been poured. With a large-sized darning-needle, armed with double worsted, thread your worms from end to end, entering the needle at the head, and bringing it out at the tail, and arranging the string of worms over a short piece of double whipcord about 18 inches long (stretched for the purpose) in loops like a tassel, until you have enough to make a ball as large as a good sized orange, which must be formed by twisting your double whipcord and worm-loops round your sinker, which may be one of the conical pattern without the whalebone, shown under the head "Chopsticks," attached to a piece of any stout strong line a little shorter than the rod. A light pole, or a strong bamboo cane, is well adapted for this kind of fishing, and saves a better rod. The clot should be moved gently up and down, just touching the bottom; and when, from the sharp tugs which will be felt, the eels are supposed to have a good hold, the clot is raised rapidly and steadily, until the eel or eels, held fast by their sharp teeth, having become entangled amongst the worsted, drop off, either into the boat, or in some convenient hollow in the bank. The coming of the flood tide, or a flooded state of the river, is the time generally chosen for this occupation, and immense quantities of eels are often taken in this way. Eel baskets or hollies are extensively used for the capture of eels, being baited and sunk over-night.

This kind of basket, or one constructed on precisely similar principles, appears to have a world-wide use. No country I have ever visited, savage or otherwise, is without its trumpet-mouthed eel basket. Some I found whilst wandering through the jungles of the Bheel country, were most beautifully and ingeniously made from a single joint of bamboo, split up into innumerable filaments, and then woven into the desired shape, leaving the knot unsplit to form a ring through which the bait was put. Fixed wicker baskets of a large size, known as eel bucks, are also used to intercept the larger eels in their autumn migration towards the sea; and of late, galvanised iron wire has been rendered available for the manufacture of most ingeniously contrived eel traps.

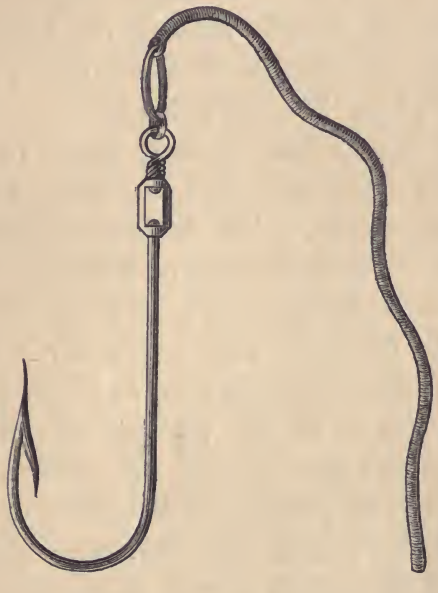
Eel Spear.

Where the bottom is soft and free from stones or large roots, an eel spear may be used at times with considerable success. These spears are trident-shaped, containing a number of tines, which when forced down on an eel open slightly and hold fast by their edges, which are roughened, until the eel is secured. The spear is best used from a boat; a long light handle should be fitted to it, and when in use should be plunged evenly and regularly up and down in the mud at the bottom, quartering your ground, so to speak, so as to leave as little space as possible untried.

Night Lines.

The largest eels, which usually remain in their lurking-places during the day and only prowl abroad during the night, are generally taken with night lines, which should be set in such places as afford the greatest amount of shelter and concealment. The back or main line should be composed of strong, well-prepared whip-cord, of length proportioned to the number of hooks it is intended to carry—from six to twenty—and if a greater number is thought requisite, it will be better to lay out more than one line. The hooks should be of the pattern known as swivel heads (*vide* cut), mounted on fourteen inch snoods, composed of two strands of fine copper wire plaited with one strand of prepared line, No. 6; bearing in mind, that each snooding must be sufficiently wide apart to prevent the hooks when baited from touching each other. Tie a knot in the head line for every snood to be firmly secured to, by a loop made large enough for both hook and bait to pass through, as the hooks should be all baited before looping on. The best bait for large eels is small fish, either loach, gudgeon, small dace, smelts, or roach, or, in the absence of these, large lob-worms or fish entrails. In baiting with small fish I use a baiting needle, which I hook on to the loop of the snood, pass it through the mouth and out at the tail, allowing the hook to lie in the bait's mouth with its point turned

on one side. When so adjusted, take two or three turns with a piece of strong thread round both the tail of the bait and the snooding; this prevents its slipping up; keep your baited snoods in a small box, with a number of sawcuts at the ends for the loops of the snoods to lie in until required for looping on.



These lines are best laid out from a boat, attaching a heavy stone to each end, leaving a small cork line to show its position, or, where marauders are feared, bearings must be carefully taken, and the line recovered with either a long hooked stick, or in very deep water a drag, which is easily made from a very rough branch with plenty of projecting points cut just long enough

to catch; weight it with a stone and drag until the line is recovered. Numbers of fine eels are taken in some localities by sniggling, which is thus done. Procure a stout needle, such as tailors use, and with waxed silk firmly secure your line, made of about twelve or fourteen yards of round plait line No. 5 or 6, to the centre of the needle; procure some well-scoured red worms, and bait, by drawing the worms on the needle from its centre so as to completely cover it; then, with a long light rod, with a fork at the end over which the line is held, carefully insert your baited needle into every hole, cleft, or crevice about piles under large stones, or in the cracks between the foundation of bridges or quays, which will be found favourite lurking-places, and from which the heads of eels will be frequently seen protruding. Allow the worm to be seized and drawn in, wait a short time to allow the bait to be well pouched, and then strike smartly, which will at once fix the needle across the eel's throat, when a little steady tension will seldom fail to bring him to light. Eels will often be taken when fishing with chop-sticks or small bolters for flounders, and when rod-fishing for other fish. Immediately on their being taken, the spine should be divided behind the head, instantly killing them, which renders unhooking easy, and prevents much loss of time and temper, as the Gordian knot must have been originally designed, one would imagine, by an eel in difficulties.

The Lamprey.

FAM., *Petromyzidæ.*

The lamprey being generally spoken of as the lamprey eel, I have placed it to follow eels in this work. It chiefly deserves our notice from some members of its family, the lampern, and sand pride particularly, constituting an excellent bait for pollack, turbot, cod, and many other fish. Large or sea lampreys ascend many of our large rivers to spawn, and are taken occasionally in nets and eel-baskets.

The lampern or fresh-water lamprey at one time was eagerly purchased in immense quantities by the Dutch line fishermen, thus creating an important and remunerative branch of trade on the Thames and some other rivers, giving employment to numbers of families who devoted their attention to this occupation, but of late years the trade has fallen off, other baits are used, and the lampern fishing is neglected. The sand pride is found in many of the small brooks, particularly in the west of England; they can be easily obtained by damming up a pool, dipping out the water, and then collecting them from among the stones, roots, &c., at the bottom. They are very tenacious of life, and can be kept in a bait-kettle for many days.

The Sand Launce,

FAM., *Anguillidæ*,

Is a most valuable fish to the fisherman as a bait for other fish, and a general favourite it is found. Many localities along the southern coast are celebrated for the number of launce to be taken in the sands of their beaches; and several modes are adopted for their capture, such as raking the sand with strong iron rakes, and searching it with blunt reaping hooks, with which they are hooked and dragged forth. Some little address is required in taking them, as, if not instantly secured, they dart again into the sand, and escape by their exceeding activity.

The Cuttle Fish,

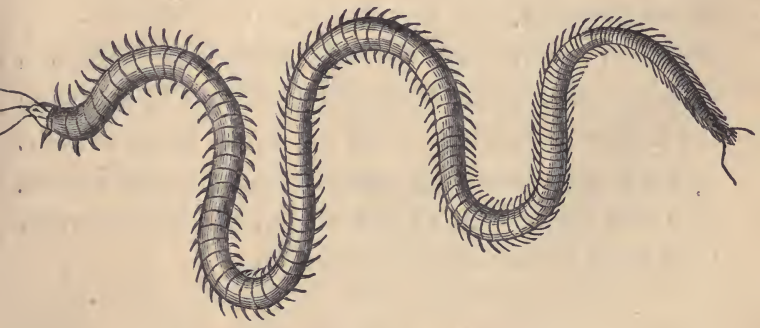
FAM., *Sepiadæ*,

Is often taken when whiffing, or on float lines, following the bait to the surface, sucking it, and holding fast by its long tentacula. When brought alongside, some caution is required in securing it. The gaff should be held ready, and the instant the cuttle is near enough to make the stroke secure, it should be rapidly hooked up, and just as rapidly pushed back again, as, should the cuttle be brought above the surface, its captor is exceedingly likely to have his share of the disagreeables resulting from the

transaction, as the black paint-like liquid with which it is filled is instantly so ejected that the trousers and waistcoat of the uninitiated are covered in such a way as to make him wish his acquaintance with the sepia never made. When thrust back as above directed, the black fluid is thrown out in a large black cloud, extending for several yards round the captured cuttle, which can then be safely hauled in and put aside for bait, as it is excellent for that purpose.

Worms.

The most important to the sea fisherman is that known as the mud worm, of which a representation is given in the woodcut annexed. It is to be found



FAM. *Annelides.* *Syllis Monilaris.*

by digging in the mud of creeks leading to the sea, at low water, and under stones or old timber which have been long in one position at the bottom. When

taken, they should be washed perfectly clean, and put to keep in a flat, shallow box, with its bottom and sides covered with pitch, which should be melted into all the corners and joints with a hot iron. A little clean sea water should be added every day, and all the dirt carefully taken out with the dirty water, and any dead or broken worms which may be found. Put the box in a cool cellar, or other convenient place, and the worms may in this way be kept for a long time. It is always well to have a small-sized box, also lined with pitch, with a slide cover like a puzzle-box, in which to take a supply out for fishing, allowing the surplus, if any, to remain at home in the larger box.

Lug worms are often used as a bait for hand lines and bolters, and are obtained by digging with a spade in the sand at low water, where the sand-heaps show their workings.

Earth worms are too well known to require a lengthened notice. They are best kept in wet moss in a large flannel bag. The lob worm, found at night on old land, stretching many inches from their holes, are best for the larger kinds of fish; and the red worm and large brandling for the smaller.

The Loach.

FAM., *Cobitis barbatula.*

Although strictly an inhabitant of fresh water, it well merits mention and favourable consideration, as it

will be referred to as a bait for other fish; and excellent it is for this purpose. The loach is an inhabitant of shallow clear brooks, on the gravelly bottom of which it may be often seen, head up stream, lying perfectly motionless, waiting for minute insects and worms which the current may bring within its reach. It is a small fish, rarely exceeding four inches in length, furnished with barbes or wattles at the lips, of a yellowish mottled colour, and not unlike a gudgeon in form and motion. A small meshed landing-net may be used for its capture, and a long light stick with which to touch the fish and cause it to dart into the net will be found useful. A large sized zinc bait-kettle should be provided to carry them in, and a regular supply of fresh water and small red worms furnished whilst they are kept. Loach of a very large size are found in many of the rivers and tanks of India, being in my opinion by far the most palatable fresh-water fish I have taken in that country.

Crabs and Lobsters.—Hermit or Soldier Crab.

FAM., *Cancerida*. *Pagurus Bernhardus.*

So called from its two most marked and well-known habits, that of dwelling alone in a cell of its own selection, and being at all times ready and willing to decide by battle all disputes or difficulties in which it may chance to become involved. Shells of various kinds are inhabited by our pugnacious little friend

during his growth and development, and, like the soldier crab of society, nipping, hustling, and pinching his way from the humble trochus cabin of early youth, short claws, and obscurity, to the whelk-shell mansion of prosperous well-to-do crabhood.

The hermit crab is to be found on most of our coast line, but particularly on such portions as are

most thickly inhabited by whelks and other univalve shells. They are generally taken in baskets baited with fish offal, which are laid down for whelks, and to

fishermen who are engaged in this description of fishing application had better be made for a supply of crab whelks, as they are generally called. It is a very good bait for codlings, poutings, &c., &c. A small hammer should be used to break off the shell. The claws and hard portions must be removed, and the tail portion placed on the hook by entering the point at the large end, bringing it up over the bend and shank until the hook is covered.

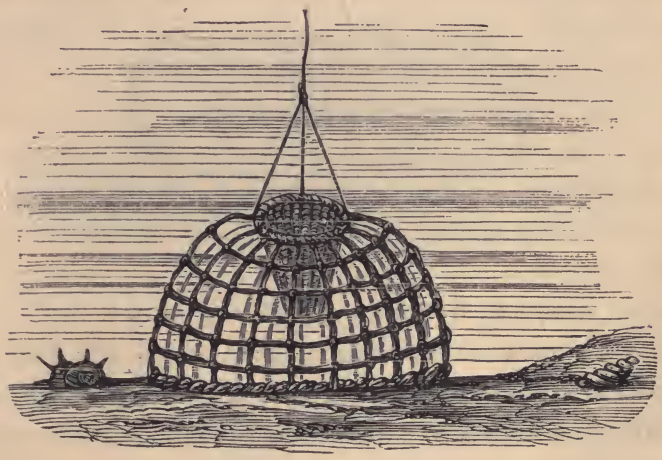
Crabs and lobsters are generally found where projecting reefs and sunken rocks afford, amongst their clefts and ledges, places of shelter into which they can retreat in case of danger. Few large crabs are taken except in comparatively deep water, but small ones are generally found in considerable numbers under large stones, in the cracks between rocks, and in holes formed by the wash of the tide. The male is to be distinguished from the female by its tail being broader. Like the lobster, it is exceedingly pugnacious, being constantly engaged in active warfare with any antagonist bold enough to meet his attack. In these engagements it very frequently happens that one or two claws are either twisted or thrown off, as it possesses the power of getting rid of a claw or two when hard pressed or alarmed. Nature has provided a curious and admirable means by which bleeding to any extent from the divided vessels is prevented, as by the very small surface exposed by the division of the joint at its narrowest part, its substance rapidly

contracts, closing the orifice. These losses are soon restored by the formation of new claws, which shoot out where the old ones are thrown off, which is always at the joint above the injury. Several species of crabs are to be found on our coasts, the most common of which will be readily discovered by lifting loose stones or masses of drift-weed. Forth darts a crab in a state of great excitement and activity, with upraised claws, ready to fight if needs be, but much preferring retreat if practicable. These are generally found to be the small green crab, uneatable, and of little use except as bait for some kinds of shell-fish. There are also several species of swimming crabs, which may be distinguished by the hinder pair of legs being flattened and oar-like at their extremities; these are of little interest to the fisherman except as a bait.

Crabs and lobsters cast their shells annually, and during the process seek out some deep cranny in which they may rest secure until a new coat of mail renders them capable of contending with their cross-grained neighbours.

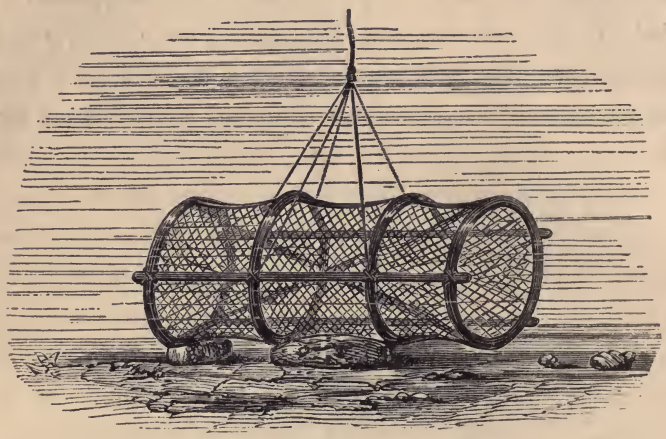
Fair-sized crabs of the edible kind are often to be obtained near low-water mark by searching for deep crevices and clefts between the rocks and stones, in which situations they will be found, and then with a small iron hook at the end of a stick, mounted like a gaff without the barb, extract the crab. Some little dexterity is required to do this, as if not instantly jerked forth, he will so wedge himself into his hole by

raising the back, that, unless piece by piece is withdrawn, it is next to impossible to bring him to light. Some instances are related of persons in pursuit of crabs being seized by the hand and retained, much to their alarm and danger, from the rising tide, until released by the efforts of their companions. The large crabs and lobsters, such as are usually sold by



fishmongers, are caught either in trunk-nets or pots (*vide* cuts), which are constructed much on the principle of the eel-baskets or common wire mouse-traps, and, like many positions into which frail humanity but too often falls, are particularly easy to get into, and just as difficult to get out of. These are baited with fish offal, and sunk with heavy stones on such ground as crabs and lobsters frequent, leaving a buoy-line to point out their position and enable the

fisherman to draw up his trap. The crayfish, or spined lobster, is caught by the same means as described for the capture of the ordinary lobster and



crab, although, from the roughness of its shell, it becomes occasionally entangled amongst the hooks used in hand-line fishing. I have taken several in this way when fishing deep on rocky ground.

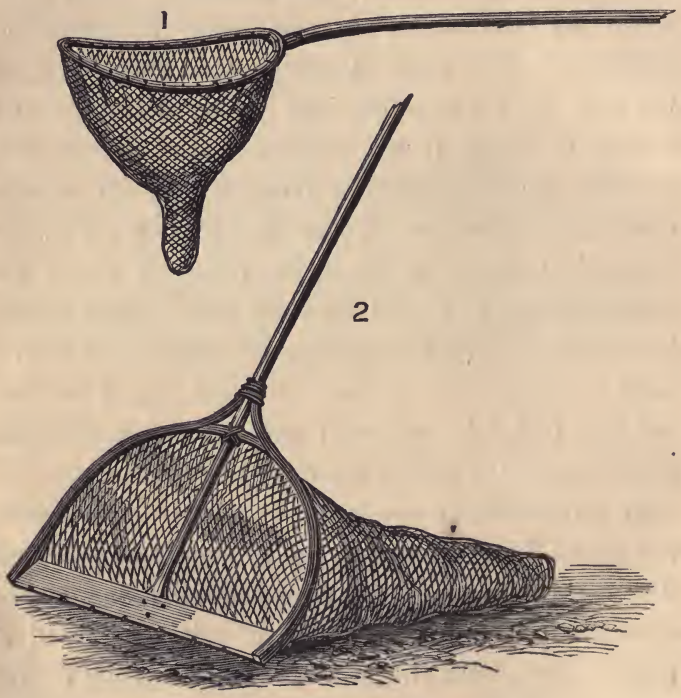
Shrimps and Prawns.

Shrimps being far more numerous and generally sought for than prawns, it will perhaps be well to describe them, and the modes had recourse to for their capture, first. But it must be borne in mind that many so-called shrimps are really prawns, and it frequently happens that during a few hours' shrimping a fair number of true prawns will be taken with the shrimps,

particularly if the ground fished over consists of bold shelving rocks with plenty of overhanging slabs, forming deep pools with clear sandy and shingly bottoms. The true brown shrimp, or (as fishermen call it) the sand-raiser, has the habit of darting about on the sandy bottom and throwing up clouds of fine sand, literally throwing dust in the eyes of its enemies, and by so doing forms a furrow in which it lies concealed, the falling sand covering it and rendering discovery by its pursuer exceedingly difficult. There are also red shrimps, which are taken in immense numbers about the mouths of many of our large tidal rivers. The shrimp is exceedingly prolific, carrying its eggs about with it until hatching time arrives. Several modes are had recourse to for its capture; some of the most usual and successful it will be my duty to describe.

In shrimping in pools, inlets, and hollows among the rocks, a net (*vide* cut, fig. 1) should be provided. The bag is composed of strong netting twine, of fine mesh, and the upper two rows of stitches formed of double twine. The ring is made of iron slightly curved upwards, and proportioned in size and weight to the strength of the person who has to use it; about sixteen inches long by twelve wide, for the ring, will be found a fair average size. It should be made flat and about one inch and a quarter wide, with a groove on both its upper and under surfaces, which must be deep enough to completely bury a stout copper bell

wire, by which the bag or net must be secured to the ring by holes punched at the bottom of the groove, at equal distances from each other throughout the circumference of the ring; by its being thus fitted,



the net and its lashing are protected from the sharp edges of stones, which would soon cut it through if unprotected. The handle should be about ten feet long, and composed of well-seasoned ash. Have it made with a bend as shown in the cut; it is far more easy to work with a curved handle than a straight

one. An ordinary fishing-basket will be found far more convenient than either a bag or hand-basket, as the former gets wet, constantly flaps against you, and is inconvenient to put shrimps into, whilst the latter is always in the way, requiring constant picking up, and is liable to upset. The best dress for shrimping I have found to consist of jacket, waistcoat, and trousers of tweed—the latter garment cut off just below the knees; wool shirt, long woollen stockings, an old pair of shoes with any number of holes in them (the more in reason the better, so long as they hold together), and a wide-awake hat. Provide yourself with a ball of stout twine for the repair of damages, which, like the net, should be barked (see article "Lines"), and a common pocket knife—a good one would be ruined in a few days. Never, if you can by any possibility do without them, take either watch or keys with you, as salt water is by no means congenial to either steel or watch-works. A small tough stick about two or three feet long, with a fork at the end, should be carried through the button-hole. This will be found useful for stirring up and dislodging such refractory shrimps or prawns as take refuge between ledges and in holes into which the net will not penetrate. The lowest spring tides—when, as fishermen say, a "great out" is made—will be found the best time, and the summer months the best season.

Before entering a pool net in hand, it will be well

to cast a sharp eye into every corner of it, as the largest shrimps and prawns will be often seen crawling or swimming about, and can then be generally brought to net; but, on the slightest alarm, away they shoot to their places of strength, when some little management will be required to get them out again. All the hanging tufts of weed should be fished, and every flat overhanging rock carefully examined, as shrimps and prawns almost invariably get as high and near the surface as possible on being alarmed.

The sand-raisers will have to be sought on different ground: open stretches of smooth even sand are favourite resorts, as are the mouths of estuaries and tidal rivers. The net shown in cut No. 2 is frequently used for taking them: this is pushed on before the shrimper, just skimming off the surface of the sand. Great varieties of curious and interesting marine productions are brought to light from time to time by both kinds of nets, and the aquarium may be often enriched from their multifarious contents.

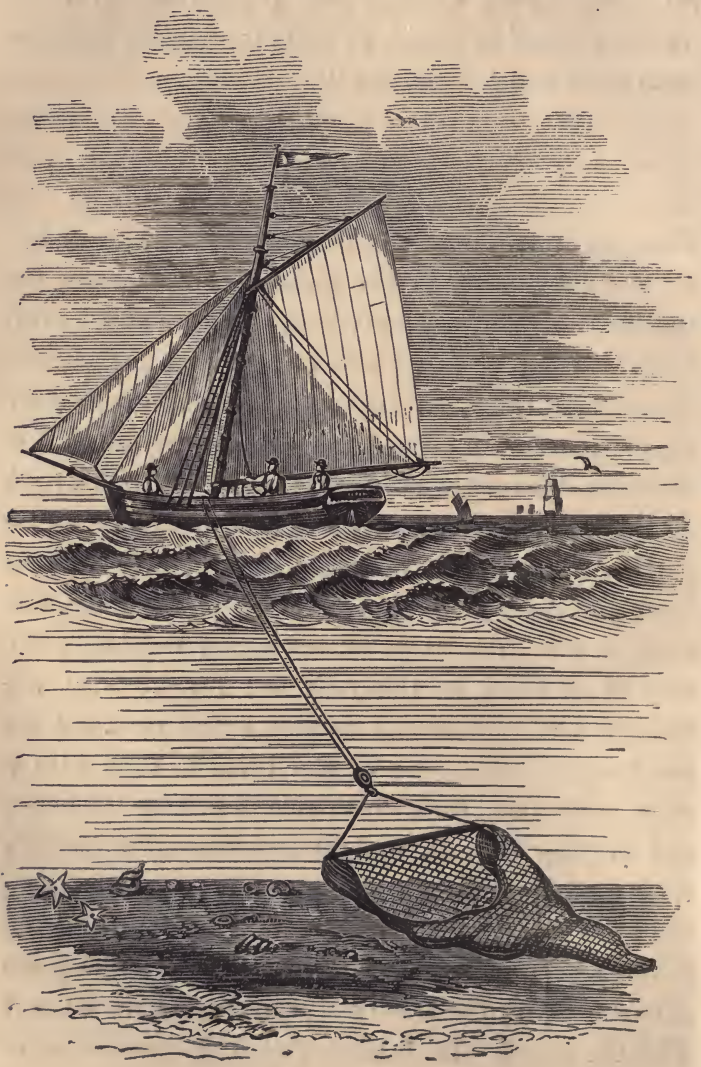
Prawns are taken in considerable numbers in some localities by lift-nets. A bag-net is attached to an iron ring baited with fish heads or other offal, weighted with a stone, and suspended by three strings like those of a scale-pan, which are attached to a line with a bung float at the end. These nets are either lowered from a boat on ground frequented by prawns, or laid down and taken up by a long forked stick. Some little care is required in lifting the net, as, if

not evenly and quietly done, the prawns are apt to leave their banquet unfinished and take an abrupt departure. Both shrimps and prawns are in some localities found excellent as baits for salmon and sea trout (*vide* article "Salmon").

The Trawl,

The form and arrangement of which will be best understood by reference to the annexed cut, is most extensively used on our coasts for the capture of fish of all kinds, it being, in fact, a sort of "omnium gatherum," into which all sorts of things curious and interesting are swept; and for all ground fish, as they are called, it is the most destructive net in use. The size and length of the beam, capacity of net, &c., will vary with the particular description of vessel used with it, but the form and general arrangement are pretty much the same in all. The large cutter-rigged trawlers carry nets of as much as thirty-six feet beam. They are composed of very strong twisted twine prepared for the purpose; each end of the beam is shod with a peculiarly formed iron, which aids in sinking the beam, and keeping it in an upright and regular direction: these are called the trawl-heads. Two ropes passing right and left to the ends of the beam are called the bridle, and by means of a block at their meeting are connected with the trawl warps, or rope connecting it with the vessel. In fishing with this description of

net, advantage is taken of the habit which all fish have of lying head to stream. The vessel is sailed with



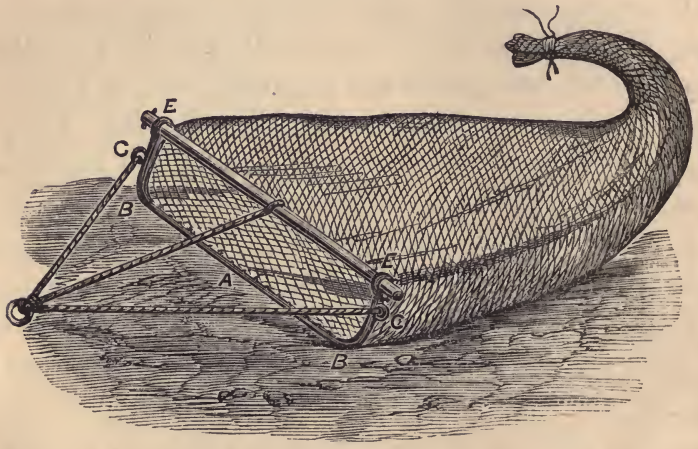
the tide at the rate of about two or three miles an hour. As will be seen in the illustration, the beam to which the whole width of net is fastened is always in advance of and above the foot rope, which being heavy drags along the ground, disturbing and driving the fish before it in their efforts to escape. A dart forward and upwards is generally made, when, the net from above keeping them down, the drift sends them deeper into the bag.

When it is wished to overhaul the trawl, it is hauled up, its tail end opened, and the contents taken out.

Trawling is practised both by day and night. Many of the fish treated on in this work, and great numbers not usually fished for with the hook and line, and hence not described, are the produce of the trawl; and to all those interested in the varied and beautiful marine productions brought to light by its agency, I would strongly recommend a trip or two in one of these craft, the crews of which will be generally found honest, obliging fellows, who may perchance wonder at the anxiety manifested by the voyager touching trumpery rubbish and trashy things, as they will call them, but will nevertheless lend a hand to secure what is wanted. Some strong wide-mouthed bottles, wooden boxes coated inside with pitch, a pair of forceps, and a fine hair sieve, should be taken on an expedition of this kind, when much to enrich the aquarium, drying-book, and museum, may be confidently expected.

The Keer Drag,

Of which an illustration is given, will be found a very useful net to those who are desirous of procuring marine curiosities, and are not enabled to take advantage of the facilities afforded by the trawl. It may be made exceedingly portable, and can be taken easily from one place of residence to another. Its cost of



construction will be very inconsiderable, and it is thus made: A is an iron rod long enough when bent, as at B, to leave eight feet for the mouth lengthways, and sixteen inches in height for the side pieces; the rings, C, should be welded on in making, as should those shown at E, through which a pole of any light tough wood is thrust, and retained in its place by pins through the ends; this must be buoyant enough to keep the frame always upright; the bridle should be

adjusted as shown in the cut; the net must be made of strong netting twine, and of fine mesh, particularly towards the small end. The first three rows should be of double twine. Secure the net to the iron (which must be flattened, turned up slightly, and holed at equal distances for the purpose) with copper bell-wire; that portion of it which comes above the bridle rings and is attached to the pole may be secured with stout twine. To use the "keer drag" comfortably, a stiff roomy boat should be chosen; a strong tow-rope should be fastened to the bridle, the net lowered over the stern and towed steadily with the tide, until supposed to have taken a sufficient quantity to be worthy of examination, when the frame is hauled up to the stern, the tail brought on board by a string left for the purpose, untied, and the contents shaken out, when another drag may be made in the same way. About ten feet will be found a good length for the net, which must not be, for the last three feet, much larger than a fair-sized coat-sleeve. This, like all other nets, should be well barked before use, and occasionally during the season. *Vide* article "Lines."

The Sean,

Although a description of net far too formidable and costly to be owned or managed by any but professional fishermen, may, from the vast amount of

wealth annually drawn from ocean's great treasury by its means, prove a matter of interest to some of my readers; and few scenes are more stirring and picturesque than seaning by moonlight in some wild rock-bound bay or cove on the rugged coast of Cornwall. The pilchard fishery has, from very remote history, been one of the principal sources of wealth to the inhabitants of that county, the arms of which are, a bar of copper, an ingot of tin, and, in a conspicuous place, the pilchard. "Tin, fish, and copper for ever!" say the Cornishmen.

The pilchard, from some inexplicable cause, has of late years become far less abundant than it used to be. Incredible numbers were taken, even admitting of the "take" being calculated by the thousand hogsheads, where comparatively few are now captured; and in many of the old fishing villages large ranges of cellars, which were used for bulking, salting, and expressing the oil from the fish, are now either vacant, or appropriated to other purposes. Three boats are requisite to work a sean with, viz., the sean boat, which should be built with long flat floors to accommodate the net, and a good entrance forward,—length about forty feet, beam in proportion; the "volyer," of the same dimensions as the first; and the lurker. The first of these boats takes the stop sean, of about 222 fathoms long by 12 deep, well corked at the head, and leaded at the foot; the second takes the tuck sean, as it is called, which is about 100 or

120 fathoms long, and from 18 to 20 fathoms deep, being so made that the centre may form a full bunt; the third boat, or lurker, should be a sharp fast boat, much less than the others, as it carries no sean. About two or three and twenty men are required to form a good crew for seans of this description; mechanics and workmen frequently engage during the season, and receive, in addition to their wages, a share of the proceeds. These boats, with their crews and nets, betake themselves to some convenient spot, come to an anchor, and look out for fish, being frequently aided by some sharp-eyed comrade, who may be seen perched like some watchful crow on a high point of land commanding the offing. On the signal being given that a "schull" is in sight, all becomes bustle and activity. The lurker is at once pulled off to the supposed position of the fish, and ascertains whether all is secure for shooting, and which way the fish are heading. When the signal to advance is given, on comes the sean boat, as fast as strong arms and tough oars can force her. Having hauled out the end of the sean warp to the volyer, by which it is held fast, away darts the lurker, bearing the master seiner, whose sharp eye and experience in the movements of the fish are both called into play when directing the movements of the sean boat's crew, whose sinewy arms are sending twine, rope, corks, and lead overboard at a rate which would not fail to astonish the inexperienced in the art: five or six minutes being often sufficient

to discharge the whole net across and somewhat round the fish. The net is now warped together by the two larger boats, whilst the energetic lurker is engaged in frightening the fish out of the few wits they have left, by dashing the water and making all the disturbance possible, thus keeping them from making a rush out whilst the ends are being brought together and sewed up; and if a large haul has been enclosed, anchors and mooring ropes are carried out, until it is convenient, from the state of the tide, which should be low, to tuck. The volyer is now called into action, passes in over the corks of the stop sean, and shoots within; when, if a large schull has been enclosed, a scene follows which, when once witnessed, will not be readily forgotten. Men furnished with flaskets are stationed on the gunwale of the boat, and dip up the fish, which are now brought to the surface in flaskets full, glittering in their phosphorescent light like molten metal: their plunging, fluttering thousands causing a peculiar rushing sound differing from all else I have ever heard, and, like "the jungle sound" which comes stealing up as the sun goes down from the great primeval forests of the tropics, leaves an impression on the memory not easily effaced.

The Ground Sean

Should be possessed by every resident on the sea-coast who keeps a boat and can command the services

of a man or two. It is a net constructed somewhat on the principle of the tuck sean just described, but very much shorter, and not so deep; in fact, it may be made of length and depth to suit any particular locality, as it will often happen that the mouth of a brook or river emptying itself into the sea will require a net just long enough to form a wide semicircular sweep round it. Wide open stretches of sandy beach will also be found particularly favourable for its use. The warp at the pole end of the net should be left on shore, and the boat containing the net rowed round the space to be enclosed, it being rapidly handed out by one man (taking care that the leads go first, and that it is well stowed for shooting), whilst another pulls. When the enclosure is complete, the other warp is brought on shore, and the net with its contents brought carefully to hand. A pole with a heavy weight at one end is often used with an arrangement of this kind to keep it upright; splashing, as it is called, may be practised with a net of this description, and can be had recourse to where the net could not be landed.

It is thus done:—Low water and a still calm night should be chosen, and the nature of the ground accurately ascertained. The "twine" should be first wetted, and then carefully arranged at the after part of the boat on a little oval stage placed for the purpose. The desired space should now be enclosed as quickly and silently as possible. Having dropped a heavy stone

attached to the foot or lead rope as close to the bank as possible, the other point of the enclosure being reached, another stone is in like manner let go, attached as the other was to the foot rope, taking care that it is dropped as much shoreward as possible. The boat should now be rowed backwards and forwards, and as much splashing and disturbance as possible made to drive the fish into the net; when this object is supposed to be attained, the net should be taken up. This operation requires some little care: one man takes the cork line, and another the leads, and by keeping the latter well up, the net will be well bunted, and all the small fish, particularly the ground ones, will be taken. Great varieties of fish are sometimes taken in this way. These nets should be occasionally barked, and frequently thoroughly dried on a grass field, or line erected for the purpose; and before closing my remarks on nets, I would strongly advise my readers to look on mice and rats as the worst living enemies to nets when stowed away, as with their sharp teeth the twine is cut through as with shears, and converted into warm, comfortable nests for their sharp-nosed progeny.

The Trammel,

For the use of a family residing near the sea, a yacht's crew, or ship's company, is perhaps the most profitable net which can be kept. It is easily handled,

requires no great art to lay out, and will last, with care, for a considerable time. The finer the twine, consistent with strength, the more readily the fish will strike into and become entangled in the net. Trammels vary somewhat in length and depth with the localities in which they are used, but from 70 to 80 yards long, and from 25 to 30 feet deep, will be found a convenient net to manage. These nets are usually laid down in the evening, and taken up in the morning. To shoot or lay it down, two persons are needed, one to scull the boat slowly ahead, whilst the other, first having thrown over a heavy stone and rope to act as an anchor, proceeds to heave over the twine, taking advantage of any run of current or peculiar set of tide caused by the formation of the coast or discharge of a river, so as to drop his net across the most probable run of the fish. These, in their wanderings in search of food during the night, run their heads through the mesh, and become entangled either by their gills or pectoral fins. The trammel, like the drift-net, hangs curtain-like in the water, and is best used by night; but, unlike it, is leaded at the bottom sometimes sufficiently to considerably submerge the corks. This arrangement is had recourse to in order to stop the ground fish in water of considerable depth. Buoy ropes are used to show the position of the net, and a heavy anchor stone at each end to keep the foot line extended. The best description of trammels are those with a second or duplicate net, so to speak,

of very large meshes and a little stouter twine, over the other net. By this arrangement large fish, in striking against the meshes, drive the smaller through the larger, forming a pocket, out of which it is next to impossible for them to get. Excellent nets of this sort are made in France and Holland, and sold at a very reasonable rate. After use it should be always brought on shore and spread out in a grass field to dry, all sticks and other substances carefully picked out, and damages repaired. When forming a part of a ship's or yacht's equipment, it may be hung to dry in the rigging. Immense varieties of fish are at times to be taken in this way.

Flies.

The term fly is applied by sea fishermen to a certain arrangement of feathers, wax, &c., which I am about to describe the manufacture of, and which may be used with considerable success in mackerel, basse, and pollack fishing. I am not disposed to think, however, that such baits are ever mistaken by the fish which they are intended to capture for flies; but the number used, the way in which they are mounted, viz., several on one trace, and the method of their progress through the water, rather leads me to the belief that they are mistaken for a number of small fry, and treated accordingly. Hooks No. 5, Limerick trout pattern, should be tied on strands of

stout gut with well-waxed silk. Finish off as shown in the woodcut describing the modes of fastening on hooks. Have your waxed silk long enough to work back over the body. After securing the end of a strand of red German wool at the tail, wind this evenly round the shank of the tied hook. When within a short distance of the head, secure the wool and nip off its loose end. Cut a long pair of wings from a white goose feather, lay them side by side, and whip them fast at the head, fasten off, cover the silk whipping at the head with melted red sealing-wax, covering all the space between the wings and the head of the hook, and the fly is complete.

Feathers dyed red are sometimes used with white, mounted alternately.

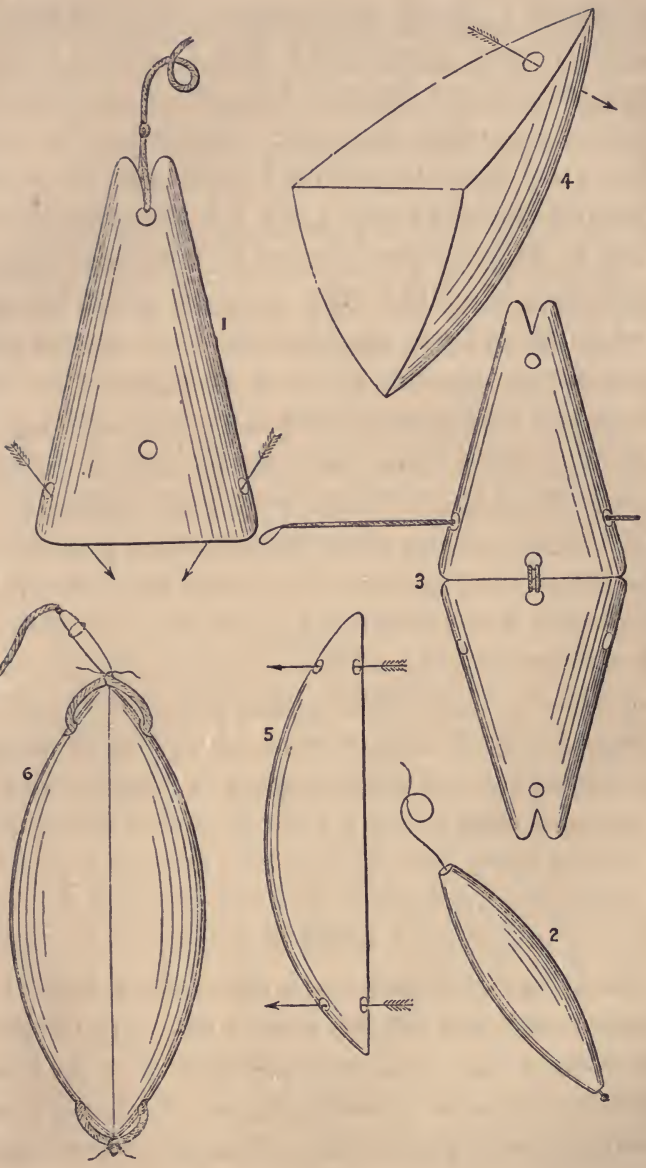
Marks.

Too much importance cannot be attached to this subject, as much of the fisherman's success or otherwise depends on his practising his art where a sufficient number of fish are to be found to be deluded by it. Some particular spots are kept profoundly secret by their fortunate discoverers, and much art and cunning are made use of to deceive as to the whereabouts of such places. Fishing grounds, as they are called, are formed by carefully noting on the shore such conspicuous objects as points of land, high rocks, buildings, or trees. Bringing them exactly in a line by a third object, and

then finding the offing by getting particular headlands on the coast "just peeping" as it is called, or "wide abroad." Great numbers of these combinations are handed down from generation to generation, and are known to every man, woman, and child in a fishing village. What are the marks for Hobbs' Hole you may, for example, ask any urchin within the range of the discoverer Hobbs, long gathered to his fathers? "Gull rock, and flag-staff over public-house chimney, eastern land peeping, to be sure; pretty fellow you must be not to know that. Where did you come from?" This, or some answer very like it, would in all probability be given. A plan I strongly advise all my brother fishermen to adopt is, whenever a good set of marks can be discovered, follow the advice of honest Captain Cuttle, and "make a note of it" at once, as of the particular day of the month and state of the tide when unusually good catches are made. All these things are worth logging down, depend on it, as fish are very apt to change their places of resort with the season and tide.

Sinkers.

These are very necessary appliances, usually composed of lead, and vary both in size, shape, and weight, according to the purposes for which they are required, ranging from over sixteen pounds to ordinary-sized duck-shot, known as split shot. The woodcut will show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several of the most useful forms, which can be made light or heavy by increasing their individual bulk, or by fastening two together by methods explained by the cut, the arrow giving the direction of the holes. No. 1 is the lead usually used for chop-sticks, weight from six to eight ounces; No. 3 is the same description of weight placed face to face, when one is not sufficient; No. 2 is a light plummet sinker for light fishing, weight from quarter of an ounce upwards; No. 4 is a cross section of No. 5, to show its keel-like edge and flat surface—its form, when complete, is not unlike a Brazil nut. These are made of all weights. No. 6 shows two of these placed face to face, and the way they are tied. A strong horsehair loop should be passed through the hole at each end, and secured by knotting and hammering in the lead. To these the line is fastened by a couple of hitches at each end of the sinker. Horsehair is the best material for this purpose, as it is not liable to twist. A convenient method of making most of these sinkers is as follows: For all the small sizes procure a perfectly dry, sound Bath scouring brick, and with your knife scoop and carve out the shape of your sinker, fix small pieces of the taper ends of tobacco pipes where the holes come by making little holes for them to rest in. Take a ladleful of molten lead and fill the moulds up. All the large sinkers are made with equal ease by placing two bricks face to face, with one-half the mould on each side. Fasten them together with twine, cut a small inlet,

and fill up with hot lead as before. Mark the weight on them with any sharp-pointed instrument.

Basket.

The basket for boat-fishing should be of oblong square form, divided one-third from the end by a basket-work partition. Place the lines and other gear in the small compartment, and the fish in the large. Let your basket have a couple of coats of paint when new, and it will be found exceedingly convenient to stow away a rough suit of tweed, strong shoes without nails, and a stock of woollen stockings in, when you move from place to place.

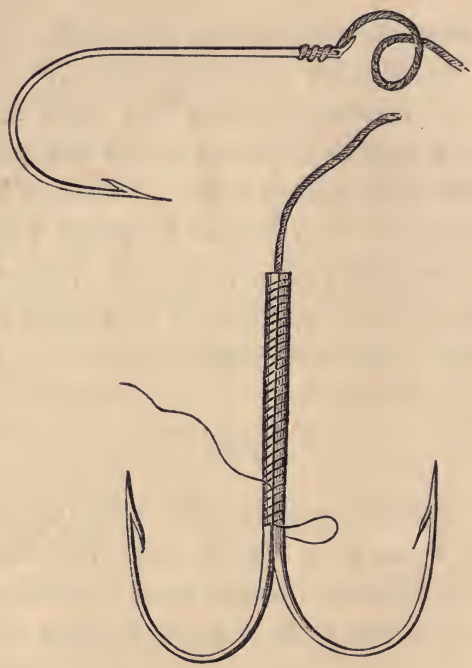
Gaff.

Never start without your gaff, which for boat-work should be made of a cod or hake hook, lashed fast with waxed twine to a handle about two feet six inches long, which is best made of ash or hickory.

Hooks.

Great disappointment and inconvenience is often experienced in consequence of the different numbers made use of to distinguish hooks of particular makes being confused. Therefore it will be well, in ordering, to observe the plan followed out in this work, and

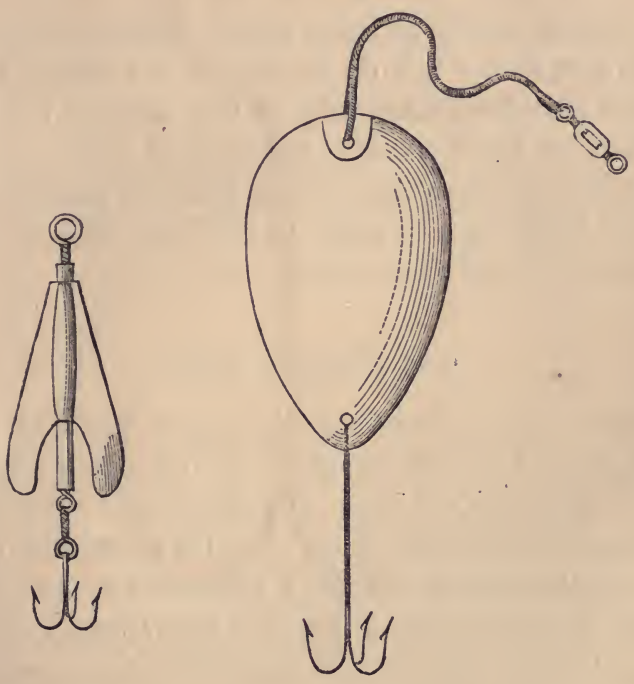
always state the kind and make. As, for example, No. —, Limerick, trout pattern; No. —, Whiting, Portsmouth pattern; No. —, Kendal, trout pattern; No. —, Kirby, trout pattern; No. —, Sea. Most of



these hooks are to be obtained tinned by so ordering them. They are preferred by some on account of their not rusting so freely as the ordinary kind. Swivel-headed hooks can be obtained by ordering them of that form (*vide* cut).

Spoon Baits,

Whether invented by our very ingenious cousins on the other side of the Atlantic, or by the aborigines of the Polynesian Islands, which has been rather an open question, are exceedingly destructive baits for



predatory fish of most kinds, whether inhabiting rivers, lakes, or the sea. They are easily made by cutting off the handles of albata-plate spoons of the size required. Drill a hole at each end, mount one end with a strong loop and swivel, and the other with a double

or triple hook, and your bait is prepared for fixing to the trace (*vide* cut). The new spinning bait* is represented in the woodcut with the spoon, and is mounted exactly in the same way.

Bait-Board and Knife.

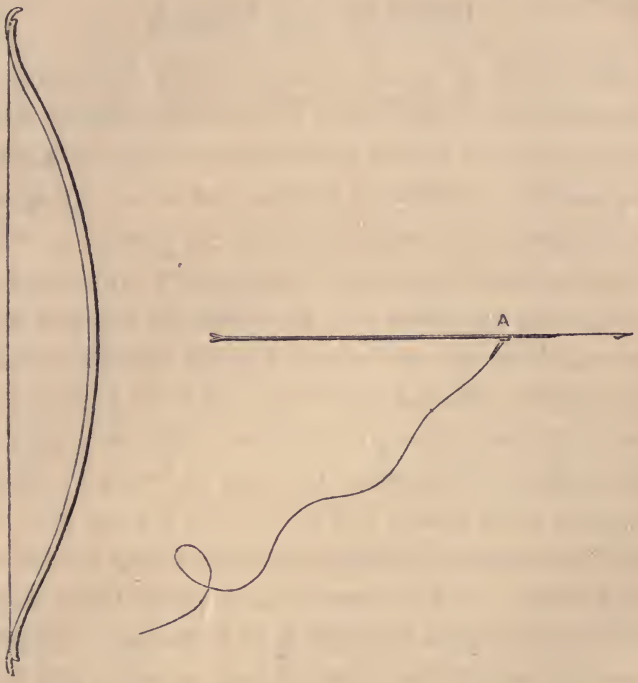
A small piece of board should always be kept in the boat to cut bait on, to prevent the thwarts and seats from being made dirty, as they certainly will be where no board is kept; and a knife, such as shoemakers use for cutting leather, should be placed in a little leather sheath nailed to the board, where it is always at hand when wanted.

The Harpoon Arrow

Affords sport in the summer months, when mullet or basse are at the surface, or immediately under it. The woodcut shows the arrangement. The bow should be short and strong; and the arrow, which is tipped with about four and a half inches of large sea fish hook, heated in the fire, and bent straight, about two feet four inches long. The shaft should be neatly and securely fitted to the iron with waxed silk; after having bored a hole to receive its blunt end, at the point marked A, a small loop of fine line is to be

* The new spinning baits are to be obtained from Mr. Hearder, Buckwell-street, Plymouth, at 6*d.* each.

whipped on, to which the harpoon line, composed of about thirty yards of very fine prepared line, such as No. 2 or 3, should be attached. This may be coiled



up in a small bowl, with a ring in the bottom, to which the inner end must be fastened. The arrow is discharged in the usual way, the line being placed outside the back of the bow, so as to hang down in front. A little practice at apples or corks set floating, will soon enable a moderately good shot with the common bow and arrow to make pretty sure of transfixing a moderate-sized fish. The point of the arrow

should be filed exceedingly sharp, to prevent its glancing off the scales.

Outfit to take Abroad.

Much will, of course, depend on the destination of the emigrant or traveller. If he intends fishing in the lakes and rivers of the countries to which he is about to proceed, a variety of matters not within the sphere of this little book would have to be obtained. Still, with moderate ingenuity the matters I shall enumerate will go far to enable him to follow his sport in most places. The rod and winch I have described under those heads will be found very useful for general purposes, but if fly fishing is intended, other rods must be procured (*vide* "Salmon"). One or two very strong deep-sea lines, which can be used at sea for albacore and bonita, and afterwards converted into head lines for bolters. A few lines, round plait, from No. 5 to 9; a few large sea hooks, and as large a stock of Limerick and Kirby trout pattern, all sizes, and Nos. 5, 6, and 7 sea, Nos. 4, 5, and 6 whiting, Portsmouth pattern, as can be conveniently stowed away, as any not wanted for personal use are eagerly traded for by the natives of most distant countries. A few dozen swivels, No. 4, brass, and a few No. 5 "O," brass. A coil of soft brass wire; a tin box of cobbler's wax, a good stock of carpet thread, and a few skeins of strong silk. If not going *vid* Gibraltar or Malta,

some hanks of clear round silkworm gut; but if going to either of the places above mentioned, a stock can be laid in at a quarter the home cost. A small fine tennon-saw file, to sharpen hooks with. A well-made, strong pocket-knife, netting needles, and meshes. A few hanks of twine; a stout pair of scissors, and a stock of gimp of sizes. "Spoon-baits" can be made and fitted up on the voyage out.

The manufacture of salmon and sea trout flies will of course render necessary a number of matters in addition to the above. Silks of different degrees of fineness, colour, and quality—both floss and twisted; Limerick hooks of various sizes; cocks' and hens' hackles, both dyed and of natural colours; mohair dyed of all colours, hare and mouse fur, gold and silver tinsel, cord and braid (flat and round); feathers of the turkey, blue and scarlet macaw, ibis, bustard, golden and argus pheasant, grouse, galeno, and wild drake, summer duck, and any others obtainable; German wools of all colours; a pair of fine-pointed scissors, a dubbing needle, and a pair of self-acting fly pliers, will be required.

Preparation or Dressing for Round-Plait Lines, Hemp or Flax.

Make a coil of your line, which should be bound round in three or four places with thread; take of best glue half a pound, water a little more than half a pint,

placed in a large pipkin or other convenient vessel; warm gradually until the glue is thoroughly dissolved and quite clear, when your coil of line should be put in and boiled for twenty minutes. Take out your line, cut the bands, and lay it on the grass, a dry day, of course, being chosen for the operation, arranging it up and down like the teeth of a large saw, so that the strands shall not come in contact. In about four hours it will be dry, when it must be recoiled round the hand, and placed in a boiling solution of catechu; half a pound of catechu to one pint of water; keep boiling for three-quarters of an hour, remove it from the solution, and hang it up to cool for a quarter of an hour. When cool, wash it well in clear cold water, and dry for use. For this very excellent method of preparing the round-plaited hemp or flax line, I am indebted to "W. W.," a correspondent to the *Field* newspaper, and I beg to congratulate him and his brother fishermen on the discovery he has made, as it is excellent of its kind, and far superior to anything which has hitherto been made use of for the purpose.

Finishing Varnish.

The durability and strength of fishing tackle is materially increased by using the varnish, directions for which I am about to give, to such portions as are fastened with thread or silk,—the fastenings of

hooks, loops, chop-stick ends, &c. Take of shell lac half an ounce, naphtha two ounces, mix, and allow the gum to thoroughly dissolve in the spirit; keep tightly corked for use, and apply when required with a small camel-hair pencil, which should be secured with a small stick to the bottom of the cork, when it will remain soft, and be always at hand when wanted.

Knots and Hitches.

Some of the most useful will be found described in the accompanying woodcuts, and some little time should be devoted to learning them, as they are at all times important to the fisherman.

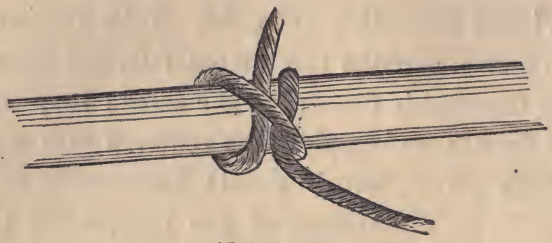
The "clove" hitch is the most secure knot for fastening anything to a round stick, such as a mast or tent pole.

The "bowline" knot is one in universal use among sailors and fishermen, as it forms a loop which never draws, and is the most convenient loop to tie when a slip-knot is wanted, which is at once formed by passing the free end through the loop.

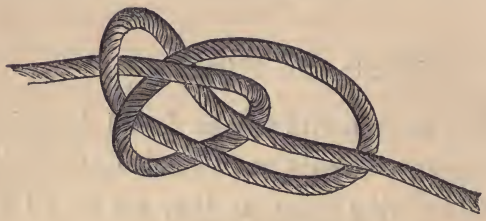
The "timber" hitch is by far the most convenient mode of securing stones to the ends of lines, or making fast anything for lowering where an easy means of casting off again is desirable.

The "gut" knot * is the one usually had recourse to

* The gut should be always freed from flat or curled ends by cutting them off, and soaked in warm water, or held in the

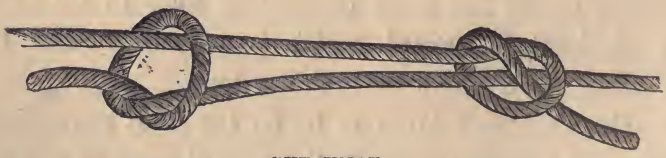


CLOVE HITCH.



BOWLINE KNOT.

LOOP SLIP.



GUT KNOT.

TIMBER HITCH.

for fastening strands of silkworm gut together, or making fast the ends of lines or strings to each other.

The "loop" slip is formed by two loops being run into each other, and forms a most convenient and safe mode of attaching traces to main lines and hooks to traces or "booms."

A little practice on a couple of pieces of stout cord would soon make the reader familiar with the mode of tying all these knots, and when once acquired is rarely forgotten.

Concluding Remarks.

Amongst the varied, interesting, and immensely valuable stores drawn from the sea's treasury and brought to light by the various modes described in this work, as well as by others which, from their use being almost exclusively confined to the professional fisherman, have not been minutely described, there are fish, mollusks, &c., &c., of kinds so varied, and whose capture is so common to nearly all the general modes laid down, that it would be difficult, if not impossible, to separately deal with them,—many, the blue shark and various descriptions of dog-fish, often proving infinitely more free than welcome: the latter mangling the fish in the nets, entangling the

mouth for a short time, to soften it before being tied together, by this or any other knot.

lines, eating off the bait, getting hooked, and causing endless trouble and vexation; whilst the former, like an insane tailor "running amuck" with his shears, nips off the lines, for the mere fun of the thing, and cuts the fish as easily out of the net by one snap, as a fashionable milliner cuts a hole in a lace cap.

Then there are members of the family to which the turbot belongs, viz., the halibut, brill, and sole, the torsk, ling, and some others of the family Gadidæ; with the thornback, the various skates, and others of the family Raiidæ.

The stingray, or trigon, a gentleman with a barbed spike in his tail like a Sandwich Islander's spear, and the electric ray, or cramp fish, are all taken by trawls and bolters, as well as by other plans. The latter fish has the power and, according to Humboldt, the will to communicate electric shocks to surrounding objects. This peculiarity appears to have been known to physicians of very early ages, and it is not to be wondered at that Pliny and others should have greatly exaggerated its attributes. Like the gymnotus, or electric eel of tropical America, its electric power is no doubt highly important in procuring and rendering its prey insensible, and more readily digested. Representatives of the family Esocidæ there are, including the garfish or gorebill (most truly "a long-nibbed thing"), valuable as a bait; and the bright, glancing, silvery flying-fish, so abundant in the tropical seas, and well worthy of notice by the voyager.

An angler or fishing-frog there is also, of strange unsightly form, but, like many such forms, marvellously organised and strangely adapted to the sphere in which it dwells, burying itself in the sand much after the manner of the "sand-raiser." The long rod-like spine with which its nose is furnished, and the tempting bait-like appendage at its tip, being alone visible to the prowling fish, who, allured by its fluttering play, venture within the fatal grip of a pair of jaws of no ordinary size and power. The voracity of this fish is immense, swallowing incredible quantities of flounders, plaice, soles, and other fish; your trammels and trawls will in some places become encumbered by numbers of them. They are perfectly useless, except as crab-pot bait or manure.

Oysters, scollops, mussels and cockles, periwinkles, whelks, and limpets, are all by one mode or another brought under the notice of the fisherman. On the commercial importance of some of these shell-fish, as they are popularly called, it is needless to dwell here, the London market alone consuming them by ship-loads, and paying annually for their obtainment sums which seem all but incredible. To the naturalist or collector of the beautiful and curious, few fields are more wide and productive than that offered by the study and examination of the denizens of ocean's depths.

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